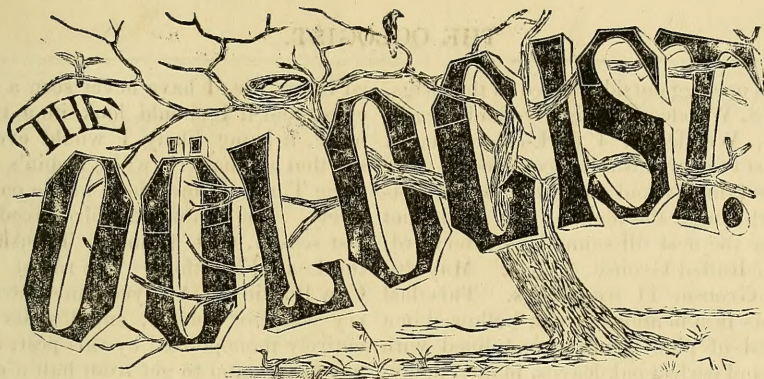


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OUR sincere regret is due the readers of this issue of THE OOLOGIST that we were unable to fulfill our representation ; that of figuring the Mexican Trogon in this issue. Our lateness in appearing was due to this misfortune. We are very sorry to disappoint many, who, we infer anticipate something very fine ; but in the April issue we doubtless will present attractions sufficient to compensate for our omission.



ISSUED IN BEHALF OF THE SCIENCE WHICH IT ADVOCATES.

VOLUME II,

MARCH, 1876.

NUMBER 1.

THE SEASON OF '75.

J. M. W.

Concluded.

ONE of the Cuckoo's nests was a perfect nosegay of blossoms and flowering grasses with which this bird had adorned it. Singularly enough, almost over the Cuckoo's bower, near the top of a white birch sapling was a nest of the Rose-breasted Grosbeak containing three eggs. The Marsh Hawk's nest I took up bodily from the ground, and with a friend in front to hold back the brush, we got it safely outside, thence across the lots to the wagon, and it now occupies a respectable niche in my cabinet. It is a poorly constructed affair, but quite bulky, and is by far the largest nest of any ground builder in this section. The Grosbeak's nest was up eighteen feet, nearly, on a slender sapling which would not sustain my weight; but by holding three of the clump of white birches together I contrived to ascend. The nest of the Rose-breasted Grosbeak is small for so large a bird, and the eggs are appreciably larger than a Tanager's, which they resemble. The eggs, like those of some other types, can be seen from beneath. How often, when climbing to nests of the Heron and Pigeon families, have we seen the rose-

touched pearls gleaming through the platform of twigs. Ah, those are the true jewels with which we enrich our collections!

In this feathered paradise were also found breeding in security, the Maryland Yellow-throat and Summer Warbler, Ground Robin, Mourning Doves and Sparrows, which the presence of the Harriers and Cuckoos seemed in no wise to disturb.

For the common types of northern birds, I repeat that the season of '75 was a brilliant one for the amateur collector. The game birds had not been shot at much the fall before, and they bred extensively. Hawks were never so abundant, from the severe winter in their more northern haunts; and, indeed, from the present open winter I prophesy a scarcity of birds of prey and the quarry they follow the coming spring. Among the exceptional birds which usually breed to the north of here, I took single sets of Yellow-winged, Connecticut and Nashville Warblers, while of course Prairie and Chestnut-sided Warblers were not uncommon. In this connection, and bearing on the general remarks of my last, a few extracts from my field book may not be uninteresting. The first entry is April 12, Crow, four fresh eggs, Red-shouldered Hawk, three do. Last entry is July 22; Purple Finch 5—clearly a second litter. There were four eggs inside this Finch's

nest and one egg outside lodged in the twigs. April 18, Woodcock, 4 lightly-shaded eggs. June 3, Woodcock, 4 dark-colored eggs. This last of course was a second brood; the eggs contained vapid embryos, for my setter Carl caught the female, and I did not discover the nest till some days afterward. May 9, Ruffed Grouse, 3 eggs. May 20, Ruffed Grouse, 11 fresh eggs. This last nest was in a hemlock grove, hollowed in a deep bed of pine needles, and lined with glossy and perfect oak leaves, plaited in layers with a skill remarkable in a Grouse. May 14, with a friend, I found two Kingfishers' holes on the banks of the Paclaug River. I gave my friend first choice of holes, and having made his own selection, we began digging. I took a fine set of 7 fresh eggs from mine with little effort, but my friend, after mining eleven feet and burying himself twice in sand and clay, found but one egg. Somehow he didn't seem satisfied with his choice! April 25, Barred Owl, with one egg only containing large embryo. I was obliged to send up a club to my climber to defend himself from the attacks of the female. First and last I have found a number of these Owls breeding, and my experience is that they are the only birds at the north that will fight in defense of their eggs. Every variety of Hawk will observe a safe distance from the climber, with perhaps the single exception of the Fish Hawk—which, however, is not a true Hawk, being more allied to the Eagles. June 1, Green Heron 5 eggs. This bird invariably lays 5 eggs. I examined 31 nests of the Crow last year, and in but one was there 6 eggs. Out of many Orioles' I found two sets of 5—4 eggs being the rule. June 1, Spotted Sandpiper 4. The eggs are always big end up and invariably 4. I have seen Woodcocks' with 5. June 3, Humming Bird, Night Hawk and Whip-poorwill. These invariably have 2 eggs each. Of very many Cuckoos' nests found in this exceptional season, there was but one set of 4. Three was the rule; often only 2 with embryos. Of a thousand Robins' nests, into which I probably have look-

ed in my life, I have never seen a set of 5 eggs, and if I should look in a thousand more, it is not likely I would ever again see that anomaly: a white Robin's egg. In June Tanagers bred here in the oak woods freely. The commonest bird breeding here last season, aside from the Thrushes, was the Least Flycatcher. The rarest was the Cow Bunting. And yet some years, as every collector knows, small nests will be entirely monopolized by this pest, and it is not uncommon to get from half a dozen to a dozen in a day. Why they bred so sparsely the past season, is a new freak of this curious parasite which it might be interesting to explain.

FLICKER, FLICKER!

Perhaps of all the birds breeding in this latitude, the one most irregular in the number of its eggs, next to the Quail and Ruffed Grouse, is the Golden-winged Woodpecker. It never lays less than 5; 7 and 8 are commonly sets. I have seen nests containing 9, and by my last field book, I find it was as late as June 4, I found one high up in a chestnut limb sitting on 10 eggs. I broke one egg, and, finding it nearly hatched, left the remaining 9, feeling that they ought to produce "squabs" enough to satisfy any reasonable parents.

INDICATIONS are that spring will be somewhat late in opening the season for Hawks' eggs, as at this writing (March 24), there are still from five to thirty inches of solid snow upon the ground. This applies to the northern parts of Eastern United States.

INFORMATION received from Illinois contains a favorable report of the advanced state of the season there, stating the arrival of the bulk of the Hawks, Sparrows, Vireos, Pigeons, Geese, Blackbirds, &c. at all the central and southern points of that State. Many nests, also, in process of construction, are reported.

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Birds' Eggs and Nests.

SPECIES mentioned in this issue:—

Least Bittern, Wood Ibis, Glossy Ibis, White Ibis, Sage Cock.

491. LEAST BITTERN.

This bird lays an entirely different egg from the Bittern (See suppl. Sept. no.). It nests in similar places and in the same manner; i. e. in swamps in the boughs of the cypress or cedar, or close to the ground in reeds. Eggs are nearly white, without markings, elliptical, from three to five in number and from 1.20 to 1.25 inches in length, by .90 to .95 in breadth. In size and shape they are similar to those of the Leach's Petrel. They have, however, a thicker shell, rounder and less lengthy shape, and have a more robust tint.

497. WOOD IBIS.

Breeds in Florida, Mississippi, Arizona, Colorado and adjacent States. A set comprises two or three eggs, in shape similar to those of the other species of this family; white, with a chalky shell, and without markings. The general measurement is 1.80 by 2.75; Dr. Coues describes a specimen as having a shell "rough to the touch, with a coating of softish, flaky, calcareous substance."

There are many interesting points concerning this bird's habits, which we should, if space permitted, insert. If any of our northwestern correspondents are at all familiar with the bird, we should like to hear from them. Many conflicting statements have been made, regarding its habit of associating in flocks, which some authors deny.

500. GLOSSY IBIS.

Eggs measure from 1.90 to 2.10 by 1.45 to 1.50 inches in length and breadth. In color they vary some from a light to a medium slaty green, but minus of markings. They differ from all Herons' eggs in the texture of the shell, which is heavier and more pointed at one end, this not usually being the case with those of the latter, which

are nearly always oblongly spherical.

499. WHITE IBIS.

This bird deposits three or four eggs, of a light greenish white, under artificial light tending to bluish. Unlike the eggs of the two last, these are covered with spots and blotches of two or three shades of purple, cinnamon and umber brown, distributed most thickly about the maximum end. In some cases, though rarely, the spots are so pale as to be scarcely discernable, and give to the egg an appearance of having been rolled in the dirt. Florida is their favorite breeding ground, where they are quite common. The eggs do not differ materially in size from those of the last.

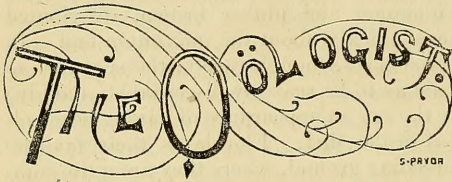
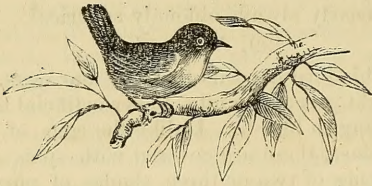
462. SAGE COCK.

The Sage Cock is an inhabitant of our far western high plains, where it is to be found in considerable numbers, especially through the region watered by the branches of the Kansas River; in Utah and Washington Territories and western Kansas. They evidently prefer barren sage plains to wooded regions, as most authors note their disappearance in woody districts. They are the largest birds of the family *Tetraonide*, are truthfully entitled the Cock of the Plains. The vast seas of sage bushes found on those high plains furnish its main food, from which it derives its name.

The Sage Cock lays a peculiarly shaped egg, it being, as a general thing, long and rather more pointed than is usual with those of our smaller Grouse. Plainly speaking, the egg is brownish white, but with a tint varied from light olivaceous drab to grayish brown, in some specimens, doubtless acquiring a darker tint than in others. This is covered with a speckling of fine brown dots, more or less thick on various eggs, and as a general occurrence, being of a semicircular, or tri-quarter circular shape. The nest is placed on the ground at the foot of a sage bush, in which the eggs, to the number of from 10 to 15 and even 17, are laid. They measure on the average 2.10 by 1.50 inches.

"OVUM."

TO BE CONTINUED.



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THE OOLOGIST, Utica, N. Y.

MARCH, 1876.

NOW someone says that we've "Egg-shells on the brain." Sorry, we are sure, that we are in so hopeless a case as this. Our informant advises us to throw up such trashy nonsense, and engage in "something indicative of manliness." It would gratify us very much to please our friend, but when one is accused of having egg-shells on the *brain*, we hardly know what to say; it always was our conviction

that they were kept in cases for the purpose. Granting, however, that they are on our brains, may we inquire whether our friend,—who, by the way is a geologist,—has "stones on the brain"?

May we not be interested in our branch of popular study with as much vehemence as scores of patrons of other sciences: geology, botany, philately, zoology, etc.? It is our "hobby," and as such, we must give it the attention others do to other studies. Our primitive researches induced us to believe that our future interest would be developed from ornithology, and we followed it. We are not sorry neither. No. The farther we progress, the greater our avidity, or in other words, our excitement. There are very many who look upon an egg-shell as merely an adornment to the parlor bracket; others who regard an egg as an object worthy no attention whatever. As much lies in the study of a simple egg, as in the classification and analysis of a mineral substance, and we regard it in the same light as do advocates of those sciences.

American Birds.

The Mexican Trogon.

Trogon mexicanus.

(See illustration on first page.)

THE family of Trogons are all very beautiful birds, but for purity and perfection of plumage, and gracefulness of form and motion, the Resplendent Trogon stands pre-eminent among our North American—or rather American—birds. The American Trogons justly deserve the credit here, usually accorded the Birds of Paradise of Oceania, and have often received the appellation of American Birds of Paradise, from the position they occupy as a group. The Trogons inhabit the tropical climates of all countries, though, singularly enough, but one species is at

present known to Africa. They subsist upon the various forms of insect nature, and the fruits always abundant in warm climates.

The Mexican Trogon, an illustration of the male of which we give, is the only true bird of this family found to be an actual resident of the territory considered as the limits of North American birds; any others which have been obtained within these bounds, are called extra-limital. The bird under consideration, is about twelve inches long, of which the tail constitutes nearly eight. The male bird is described as follows: Throat, ear-coverts and wings black, the former fading into steel-green on the chest and upper parts, the latter sprinkled with a fine mottled gray; two central tail-feathers green, tipped with black, the two next on each side entirely black, often with greenish reflections; the three outer feathers on each side, black, mottled and tipped with white; primaries black; at a point above the breast, a crescent of white encircles the neck; the breast, belly and under tail-coverts are of a beautiful clear scarlet. Bill yellow; feet brown.

This bird inhabits Mexico and Central America, but is more commonly found along the valley of the Rio Grande and in north-eastern Arizona. Like all the *scansores*, this species has its toes in pairs. The bill is short and thick, resembling those of the true flycatchers; it being in habits also, similar to those birds. The Mexican Trogon breeds in the hollows of dead trees, in which it deposits its eggs to the number of three or four, on the fine worm-eaten shavings. They are invariably white.

The present bird is extremely shy, and secludes itself among the highest branches of tall trees during the greater part of the day. In connection with the Resplendent Trogon, this bird formed the subject of many ancient Mexican and Aztec mosaics and emblems. The tail-feathers of the former were esteemed by those old kings to be of priceless value, and on account of the superstition which at ancient periods was very prevalent, they would not allow one to be killed. These ancient kings kept hundreds

of Trogons in captivity, employing often as many as several hundred men to tend and feed them.

Instincts of Birds of Prey.

A CORRESPONDENT of the Liverpool *Mercury* writes: "Having remarked that your correspondents of late have revived the Audubon-Waterton strife whether birds of prey are allured more by instinct of sight or smell, I beg leave to make a few remarks that may be new to many of your readers, embodying the result of some attention to the special subject in dispute. In regard to sight v. smell I submit that the larger birds of prey are wont to mount guard over certain definite tracts, which they jealously keep from invasion, soaring out of sight in circles of vast area over their large quarry just as the Sparrow Hawk, hunting on a less scale, is seen to circle, or the Kestrel to hover, on a lower level in search of lizards and field mice beneath. My argument on behalf of sight may be divided into three heads: First, Physiologically, the nasal organ is not so strongly developed as the visual with the class in question; second, The feathered foe can easily be cheated by any simple shift which hides the object of pursuit; third, In very dry climates the newly killed carcasses, though without smell, are at once found out by the birds of prey where seemingly none exist. The first head cannot be dealt with fully, without more technicality than is fitting here, so I will not dwell upon it. On the second head I need but say that the Andean herdsmen are used to breed their cattle from black stock rather than light colored, so as to hide their calves from the Condors that soar overhead, and that game-keepers put bushes over their nests to cheat the neighboring Rooks of their dainty meal. Thirdly, in the African or Central Asia deserts, where the traveler is often surprised to see the Vulture or Eagle bear down upon the dying mule or camel almost before he falls to the ground, he will, if curious, have marked, as I have

in the plains of Syria and deserts of Attammott, and Bahiooda, that far above the caravans, like specks in the milky way, whirl the huge scavengers of the waste; now far out of sight, now sweeping lower as if to scan the human atoms, his hoped-for banquet below. No scent is wafted aloft from the carcass, sun-dried to parchment in the scorching sand, and yet, as if from out of the earth, the unclean birds flock to carnage. Again, in South America, sitting on the high eastern spurs of the Andes, at various points between Santiago de Chili and Quito, at a height of 10,000 feet or 12,000 feet, I have often watched, glass in hand, the huge Condors sweeping in easy curves far beyond the ken of valesmen below, or with a mere turn of the pinion gliding adown the air to scan yet nearer their hunting grounds beneath, and 'gars the cow run bellowing to her calf.' Surely the lordly Condor, Eagle, or Vulture, that keeps watch and ward over desert and vale, in circles far beyond the human ken, ever and anon swooping to seize or spy out his fearful quarry from spheres where no particle of scent could be borne on the thin, dry air—surely he cannot be led by the nose, but must rather be by the eye."

Foreign Birds.

The Bell Birds.

Chasmarchynchus.

BY F. J. DAVIS.

HERE are several varieties of these remarkable birds, all inhabiting South America. The species I shall mention first is the

TRUE BELL BIRD,—*C. carunculatus.*

The plumage of this curious bird is snowy white, and at the base of the bill is a remarkable wattle, which, when the bird is under no emotion, hangs pendant, but when startled or excited it inflates into a fleshy

horn about two inches long and half an inch thick at the base. The female is smaller than the male, and the wattle proportionately considerably less in size. For a description of the song I refer to Waterton, probably the best authority. He says: "His note is loud and clear like the sound of a bell, and may be heard at a distance of three miles. In the midst of these extensive wilds (of Demarara) generally on the dried top of an aged tree, almost out of gun reach, you will see the *Campanero* (Bell Bird). No sound or song from any of the winged inhabitants of the forest; not even the clearly pronounced "*whip-poor-will*" of the Goatsucker cause such astonishment as the toll of the *Campanero*. With many of the feathered race, it pays the tribute of a morning and evening song; and even when the meridian sun has shut in silence the months of almost the whole of animated nature, the *Campanero* still cheers the forest. You hear his toll, and then a pause, and then a toll again, and again a pause; then he is silent for six or eight minutes, and then another toll, and so on." He is never seen to feed with the other Cotingas, nor is it known in what part of Guiana it makes its nest.

THE BARE-NECKED BELL BIRD,—*C. nudicollis*

Sometimes called the Blacksmith by the Brazilians, whose country it inhabits. It is pure white, except the bridles and throat, which are bare and the color of verdigris; beak black; feet flesh pink. The female is not so large as the male; throat and top of head black; upper part of body green, under side yellow, spotted with black and streaked with white and yellowish lines on the throat. The Blacksmith is one of the most beautiful of the thousands of strange occupants of the vast and magnificent Brazilian forests. The elegant whiteness of its plumage affords a very striking contrast to the rich green hues of the leafy coverts which it frequents; its loud, clear note ringing bell-like in the deep, solemn silence of the woods, at regular intervals. Then it is rapidly repeated, resembling at times the

blows of a blacksmith on his anvil, and no sooner does one bird commence than all the rest follow suit, "producing such a concert as" says an eminent writer upon the subject, "must be heard to be appreciated." The Blacksmith perches on the topmost bough of one of the great trees of the forest out of gunshot, so the sportsman is obliged to content himself with admiring the beautiful bird as it stands in all the splendor and symmetry of a monarch of the aerial kingdom. The next species I shall mention is the

ARAPONGA.—*C. variegatus*.

Its prevailing color is white, but its beauty is marred by an intermixture of gray; wings deep black; head pale brown. The throat is bare, but studded with small, fleshy, worm-shaped appendages of a deep brown color; bill and feet black. The throat of the female is of a greenish color, the strange appendages of the male being replaced by feathers. The other species is the

THREE-WATTLED BELL BIRD.—*C. tricarunculatus*.

This bird is furnished with three fleshy lappets, one of which grows above the base of the beak, the others appear as prolongations of the corners of the mouth. The color of these lappets, also of the bill, is black. Head and throat of male bright chestnut brown; nape and upper part of breast, white. Female olive green, streaked on the under parts with a lighter shade, and entirely destitute of the peculiar wattle. Costa Rica is the locality of this bird, where it is sometimes called the Hammerer.

THE official report on ornithology, by Dr. Coues, containing notes taken on the birds of our northwestern territory during the U. S. Geological survey under Hayden, was received recently. It contains many points of interest.

The Globe, Fishkill on the Hudson, N. Y., we observe, has a department in its columns devoted to natural history, under the

heading "Our Naturalist." We wish it success.

A MALE Blue Bird was shot at Rochester, N. Y., on the 9th inst.; first one seen in that vicinity this spring.

Am. Oological Society.

NEW MEMBERS.

Fred. S. Sherman, Box 163, Castleton, Vt.
Peter de Nottbeck, Box 54, Fishkill on the Hudson, N. Y.

THE Report of the Society, ending with February, accompanies this issue. The succeeding Report will be made in September. Members be sure to obtain them all.

OUR readers are referred to H. T. Jones' advertisement. He has a good supply of drills at plain prices.

THE *Am. Naturalist* contains an article on the proper scientific name of the Song Sparrow, also a note on the occurrence of the European Tree Sparrow in this country, by Dr Merritt.

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The Cause of the Extinction of the Great Auk.

FIFTY years ago the Great Auk was found in large numbers on the Funk Islands, off the coast of Newfoundland, but not long after disappeared. The *American Naturalist* briefly narrates the story of its extinction thus: "The birds were hunted for their feathers by the Newfoundland fishermen, who would row round them in small boats and drive them ashore (the Auks being unable to fly) into pounds. The birds were immersed in scalding water to remove their feathers, and their bodies were used as fuel for boiling the water. It is doubtful if the *Alca impennis* now exists anywhere about the islands of Newfoundland or Labrador."

In the strict sense of the word, the Great Auk undoubtedly exists still in some numbers in the extreme northern portions of our continent, but beyond the reach of civilized man. Some authorities conflict with the statement above, inasmuch as the fishermen and "egggers," who carried on the infamous traffic of gathering the eggs of this and other sea birds in such quantities, so far reduced the birds as to compel what remained to seek safety in the far north.

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THE OOLOGIST.

ISSUED IN BEHALF OF THE SCIENCE WHICH IT ADVOCATES.

VOLUME II,

APRIL, 1876.

NUMBER 2.

TROCHILUS COLUBRIS.

NOW many of my readers ever went into a forest with the intention of finding a Humming Bird's nest, and found one? Not many I fancy. I don't refer to those rising naturalists who have accidentally found one, or those enterprising correspondents who will now rush into print to say that they have been shown a nest on an apple-tree in somebody's back yard; but I mean, to go deliberately into a great wood, and by tireless perseverance and applied skill to secure this great prize. And yet it can be done. Not in a day perhaps—it is a work of time, patience and skill.

You must choose

a flower garden nearest an oak wood in the breeding season. For your first step get the general direction the birds take after feeding, then follow them with your eyes as far as possible. Next take up your station where you lost sight of them, wait till they go over again, and follow them still

again, shifting your place to where you now lose sight of them, and so on. A reclining position is best in these changes, or better still, by lying flat on your back you can take in the whole sky line. Arriving at the wood, if your Hummer flies high over the tops of the trees, you may as well give this one up, for its home is over the wood or in the heart of the grove. But if it plunges at once in the branches you may be encouraged to



THE MEXICAN TROGON. (See March issue.)

believe its nest is not far away. Still following the bee-hunter's art, you will soon narrow your search to a certain cluster of trees and thence by good luck to a certain tree; but even then you may not be sure to discover the particular limb. Observe, you must never look for a Humming Bird's nest of itself. Don't be foolish enough to suppose you can see the nest, unless you are shown, even if you know the very tree—the bird must be your guide, first, last and always.

The last week in May, '75, I saw a pair of Ruby-throats taking lichen from a rock, followed them half way home the first afternoon, and the next evening to their nest in a vigorous oak on the edge of the wood. Hummers do not fly directly to their nests, but alight for a moment on a twig above, or make two sharp flits, one to the right and one to the left and then pounce into their lovely shell. While covering the eggs, the head weaves from side to side constantly with a gentle motion, as if on the '*qui vive*' for enemies. Waiting until the eggs were laid, the question was how to get them unbroken, the nest being on a bare outlying twig, sixteen feet from the ground, without limbs beneath, and no way to reach down from above. Drafting into my service five stalwart young hunters and collectors, we got an old ladder which was some feet too short. But they agreed to hold it perfectly "still and steady," with the upper end circus-fashion, resting on thin air, while I, the lightest, should ascend with a saw to get limb and all. So climbing up and standing on the top rung, I steadied myself with one hand on the limb, and had made two or three passes with the saw, when from below came the warning cry, "Stop that sawing or the ladder will get away from us!" I dropped the saw, and in my insecure position couldn't even break off the limb, and was at last content to tenderly loose the moss with one hand and get to the ground as soon as possible. Thus did six great sturdy robbers with the appliances of reason triumph over the instinct of these tiniest of God's creatures. So touching was it to see

the female, with a sharp note of alarm, settle on the very spot where but a moment before had been her home and her jewels, I could have wished them safely back. And then came the male, making feeble essays at consolation. We could have said, had we known their language: "Dear madam, you and your mate can build another nest this season, another next year and the year after; but I cannot make such a beautiful casket as this, and intend to keep this one anyway. But I'll be dashed if I don't feel as mean as if I had been stealing sheep!"

JENNIE MAY WHIPPLE.

Reminiscences of a Collector.

BY "OOLOGIST."

MR. McPherson had shot the Snowy Heron I saw; at least I suppose it was the one, for he said it came from an easterly direction. It was a beautiful bird and the shot it received did its plumage no harm. While skinning it I noticed the same peculiarity on its breast that other Herons possess: the yellowish, moss-like substance which naturalists claim contains a phosphorescence. In its stomach we found a large number of small brown frogs and two or three minnows. While conveying it home my friend says it disgorged a lizard, which it had probably swallowed just previous to its death.

Early the next morning a man with a rifle happened by our cabin. He had shot a deer and wanted to sell it, but would not let us have the head, because he said he "thought he would have it stuffed." I never had mounted a deer's head, so I cared very little what he did with it. McPherson thought the man must have come from some of the larger islands, as he said no deer were found here.

After breakfast I took my gun with the intention of visiting a swamp on the eastern shore of the island.

TO BE CONTINUED.

Birds' Eggs and Nests.

SPECIES mentioned in this issue :—

Whooping Crane, Sandhill Crane,
White Ptarmigan.

478. WHOOPING CRANE.

This bird breeds in the northwestern parts of the United States, notably in Minnesota, Dakota and Nebraska, extending down the valley of the Mississippi to Texas. The eggs are large, of a regular ovoidal shape, perhaps slightly elongated, and of a pale brownish drab, covered with spots and blotches of three shades of brown, predominant among which is brownish red. These markings are either of a medium size, such as would be termed ordinary spots or they are large blotches, scattered over the entire shell, usually thickest about the greater end. Scattered over the whole surface are also fine brown dots, more or less obscure. A specimen from Iowa, collected in 1870, measures 3.80 by 2.60 inches. The shell is covered about the maximum end with little knob-like projections, and like the egg of the Wild Turkey, is covered with minute punctures all over.

479. SANDHILL CRANE.

In habits and distribution, this bird may be said to bear a similitude to the one above mentioned, and it has often been confounded with it by some of our primitive naturalists. Literally speaking, it is found on the plains and slopes west of the Mississippi, or rather within the Mississippi Valley. Mr. Dall remarks its occurrence in Alaska; it is found in Florida; and Dr. Newberry notes its abundance in various parts of California and Oregon.

In general characteristics the eggs of this Crane do not differ perceptibly from those of the previous bird. Two specimens, both collected in Iowa, measure 3.65 by 2.30 and 3.65 by 2.28, showing that they are generally more elongate than the others. The ground color of the two in question is light creamy drab, perhaps exhibiting a tinge of brownish. One specimen is spars-

ly covered with blotches of chocolate, raw umber and yellowish brown, forming the prettiest specimen I ever saw. The markings of the other conform more to spots, but these are few and about the greater end. In the eggs of both this and the Whooping Crane the shell is very thick and tough. The nest of either is simply a depression in the ground, usually near the water.

467. WHITE PTARMIGAN.

The habits of this bird, as near as we can quote, are like those of other Grouse, but its distribution may be said to be North America in general north of the United States, though it is found rarely in our border States. The nest is composed of moss, leaves and the vegetation usually prevalent on the ground, scraped together under a sheltering shrub. We have the description of a nest found by a trapper on the Severn river, a hundred miles or so from Hudson's Bay. He states that it was made in a hole where once there had evidently been a stone. It was not deep, but shallow and composed primarily of leaves of ground plants and moss, with a few feathers. The nest contained six young birds, which were zealously protecteh by the female.



An egg from the Smithsonian Institution, of which the above is a good illustration, measures about 1.70 by 1.15 inches. It is light brown, entirely covered with spots and blotches of very dark cinnamon and umber brown, quite evenly distributed.

TO BE CONTINUED. "OYUM."



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THE OOLOGIST, Utica, N. Y.

APRIL, 1876.

*THE ABUNDANCE OR SCARCITY
OF BREEDING BIRDS.*

ONE of the special objects concerning the study of birds is that above referred to. It admits a very wide range of observation, and requires a large amount of research to render standard. Though we have given considerable time to the subject, we will not pretend to expound in a

very lengthy manner, as both our space and *knowledge* are limited.

Some years will bring into a section myriads, one might say, of all species common to that district; others will usher in only a straggling few. What are the causes or governing influences of this great reverse? What motive impels *resident* birds to often forsake the territory they have for perhaps years inhabited? It is a question apparently simple to answer. Undoubtedly the variation of vegetable productions as to abundant or deficient growth control the numbers of seed-eating and fruit-eating birds; the temperature our smaller insectivorous birds. Districts frequented by numerous sportsmen, are of course *depopulated* of its game inhabitants to a greater or less degree, but as a special topic this forms an item of a different nature. In 1870 a vast multitude of birds of all species inhabiting the Middle States, flooded through New Jersey and New York, and large numbers of nests were reported throughout this locality. This abundance in a great degree increased the numbers of our resident birds, as in the majority of cases the result of the season was two broods, and birds apparently rare were encountered in large numbers. In the season there was nothing unusual; neither in variance of vegetable or animal productions; and this influx corresponded seemingly to a great scarcity prevalent in other districts. Whether this is a grand periodical shift of abundance or a mere commonplace dispersion, remains to be proved. Doubtless the advance or retard of spring has a marked effect in this case, as in the latter instance, birds breeding far north are restricted to more southern grounds and those still south are yet further restrained. Thus some years will find our Hudson's Bay and Labrador birds breeding in New York and the New England States. Not many years ago, the season being later than usual, we became cognizant of the fact that quite an abundance of the Great Gray Owl, Spruce Grouse and White Ptarmigan was prevalent throughout Canada and the upper parts of the United States. To some


this may seem nothing unusual; to others it may appear quite unlikely, but it absolutely was the fact. Probably the least liable of these to vary in its breeding locality is the White Ptarmigan, i. e. the least liable to be found in such numbers so far south.

Not until this year have such numbers of the Snowy Owl been observed and shot in some time. During the past winter they were very abundant in this State, even in the thickly populated districts, and all shyness usually ascribed to them appeared to have passed away. Scores one might say, were sent here to be mounted and many were captured alive at various towns in the central districts. Now it is a question whether these birds were pressed by hunger, were driven south by extreme cold, or were transported hither by one of those periodical changes. To all appearances, the northern winter was no more severe than it usually is, and if that was the case, food could have been no less obtainable than in former years. In our opinion, it can be traced from a point favorable to observation, that is undoubtedly the direct cause of this desertion of locality. It can scarcely be termed a cause; more probably it is the instinct of the bird. As is shown with regard to other species, it doubtless is nothing more nor less than a shift; a great and constant round of occupation. This is our conviction because a studied observance of all attributes likely to impel this circumstance leads us but this *favorable* conclusion.

American Birds.

The Sparrow Hawk.

Falco sparverius.

UR little Sparrow Hawk arrives in the Middle States on the first of April, though a few are resident birds. Its preference for high, thinly-wooded districts is decided, and here, in deserted Wood-

peckers' holes or the hollows of broken or decayed trees it lays its eggs. In districts where the country is mostly pasture-land, studded here and there with tall, rotten and time-worn trunks, it is at home, and may be studied to the best advantage. Its abundance throughout the entire United States is marked, but it probably commands more attention in the Eastern and Middle States. In habits and general characteristics, it corresponds to the European Merlin, and like that bird is a favorite with naturalists. Various titles are given it, such as Little Hawk, Pigeon Hawk, Chicken Hawk, and others, some equally as absurd as the last. In these districts it subsists upon field mice almost universally, and never attacks birds if this food is obtainable. The reason is probably because the former are very plentiful and comparatively easy of capture. Occasionally it will devour caterpillars and beetles, but never when more substantial food can be procured. If taken when young and carefully fed, and placed in a spacious cage, it makes an agreeable and often amusing pet. The eggs are nearly spherical, four, five and six in number, and beautifully covered with fine or coarse spots, dots and blotches of either a light reddish cream or chocolate red, more or less thickly distributed and congregated usually about the maximum end. One and two broods are raised in a season.

To those having a taste for the study of birds this is no stranger; its imposing appearance and lively habits place it foremost among the birds one would naturally be led to observe. In the cool morning of a summer day, while seated under a tree, anywhere within its district of habitation, one is often quickly aware of its presence by a sudden—whish! and its *tlit t-lit, kil-le-kil-le*, sounds sharply on the air when it discovers that it has exposed itself to your sight. Then it quickly flies to a neighboring stump or dead tree-top, and sits sometimes for only a moment, sometimes he will stay for hours, but usually he is soon off in quest of food in another locality. Perched on the towering top of a decayed

elm or hemlock, its majestic form, though small has an air of grandeur, and with its little body as upright as if conscious of its importance, it glances quickly over the surrounding objects, in search of some victim to fasten, or to descry any impending danger. Suddenly he utters two or three sharp notes, jerks his head about, leans to a horizontal, opens his wings and away he goes, probably to return the next moment and resume the same position as before. Should an *Accipiter* or *Buteo* make its appearance, our little friend conceives that it has no business in his vicinity, and immediately gives chase to the bulky would-be intruder, rarely ever failing to drive him ignominiously from the field. Then, exultant, our little hero flits to the top of the tallest limb attainable, straightens himself up, and looks about with the air of a monarch. I never saw it chased by Crows, but some of the old farmers of Newport, N.Y. say that it is not an uncommon occurrence. The following incident is mentioned: In a large forest on the summit of the Hasenclever Hills, a pair of Crows had built a nest. A Sparrow Hawk in pursuit of a sparrow, flew immediately over the nest of the Crow, when, with a large concord of her associates, she gave chase. The Hawk, being a much swifter flier, soon distanced them, but this is not the case with our large *Buteo*; it is driven about and worried unceasingly by our Crow, who never allows him a moment's peace while on the wing. It is remarked in several notes on the Sparrow Hawk taken by eminent students, that it never makes a second dart after it has once missed its aim. It is possible that such incidents have not occurred within the observance of many, but I have witnessed it twice, and am fully convinced that its disgust is not always decided by the first and often the second failure. While stalking a Great Blue Crane in Herkimer County, N. Y., I had a good opportunity to observe this quality of perseverance, if it might so be termed. I was in the act of creeping behind a wild currant bush, when directly behind me there came two or three

sharp screams and a rasping, as of something climbing a tree. As I turned, a small form darted past and flew directly for a small birch tree, gliding, I thought, uncommonly near the tree, and alighting on a stake a few rods further off. The next moment I heard a scramble, and a Yellow-bellied Woodpecker hopped to the side of the tree nearest me. After a moment's deliberation, the Hawk again flew directly for the "treed" bird, who quickly hopped sideways and higher up; but unfortunately, in this instance, after missing for the second time, it wheeled sharply, and as quick as a flash, grasped the Woodpecker by the head, and endeavored to fly off; but the victim was too heavy and both sank to the ground, where the Hawk commenced his well-earned meal. Observing that he was an uncommonly fine plumaged bird, and having a good shot, I fired and killed him, but I lost the Crane. AVIS.

An Adventure with Owls.

ONE afternoon towards dusk, I took a walk to a wood called Solitude. It was a small wood of grand old oak, chestnut, beech and tulip poplar trees, and was a favorite resort of mine. On the evening mentioned, I threw myself down under a large oak, and remained there till it grew quite dark; when a bird flew on a branch of a beech tree opposite, and rising and going nearer I perceived it was a Red or Mottled Owl. Being rather close, I thought by throwing a stone I might hit it, and picking one up, I threw it, but missed. It flew to another tree close by, and approaching quite near, I threw another stone, again missing.

It flew not far off, and picking up a stick and getting quite close, I was preparing to throw, when it flew straight for my eyes. I threw, however, missing as usual. The bird now commenced a regular fight, constantly flying for my eyes. After throwing stones and sticks for some time without effect, I was about leaving when another

Owl, probably its mate, came to its assistance, and by their combined attacks compelled me to evacuate, driving me from the field of battle with my hat and arm covering my eyes to protect them from the ferocity of my assailants. They followed me to the outskirts of the wood and then left. It was now quite dark and leaving the wood in no jubilant frame of mind, I stumbled over a man, stretched out apparently dead. Horror! how I started. Of course I was frightened and did not stay to make examinations, but hurried homeward as fast as possible. On my way I met a park guard, to whom I related my adventure. He listened, and after I had finished merely said, "Oh, that's nothing, probably some drunken fellow who wants a bed in the open air," and passed on. I did likewise, inwardly cursing drunken men. Did any of our readers ever hear of an analogous case? This is the first instance brought to my notice, and very much surprised me; from which I have learned that the most insignificant thing may if aroused, become a worthy antagonist.

Bryn Maur, Pa. WM. H. ASHMEAD.

Am. Oological Society.

NEWPORT, R. I., March 28, 1876

I hereby call for a subscription of forty cents per each member of the A. O. S., for the purpose of obtaining a sum sufficient to defray the expense of publishing a Constitution for the benefit of the Society. Likewise I hereby commence the collection of an annual due to the same amount (forty cents) to enable the Treasurer to pay any debts or expense the Society may incur, said sum payable on the first of September or within thirty days thereafter.

(Signed.) J. S. Howland, *Pres.*

NEWPORT, R. I., April 5, 1876.

As a Committee on the Printing of the Society's Constitution, I hereby appoint

E. L. Hudnut, S. L. Willard and H. T. Jones, who shall obtain the lowest estimates of the same in their respective towns, and report the same in time for publication in the May issue of THE OOLOGIST. Said estimates to be computed on about eight octavo pages, small pica body, and the number of copies to be printed one hundred fifty (150).

(Signed.) J. S. Howland, *Pres.*

THE *Forest and Stream* for April 13, publishes a list of the birds of Fort Wayne, Ind., by G. A. Smith. 52 species are mentioned.

STILL some hunters are too enthusiastic to regard game laws, and carry on their sport with recklessness. A party of three young men were hunting Ducks and Geese in a punt on Little Long Pond, Pa., using a swivel gun for the purpose. The gunburst, killing two of the men and breaking the thigh of the other.

THE OOLOGIST for 1876 promises to eclipse its precedents in all departments of the natural history of birds and birds' eggs. Some of the best amateur authors, who write from personal experience, and who are given to careful observation, have consented to contribute during the present year. We assure our readers that our subjects are all selected, and contain sketches founded on fact, among which are notably; "Reminiscences of a Collector," "Birds' Eggs and Nests," and the series on American and Foreign Birds. We wish our subscribers and all who are interested would aid us in promoting our circulation, that we may be enabled to enlarge and present to our readers more attractions in the way of illustrations.

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ISSUED IN BEHALF OF THE SCIENCE WHICH IT ADVOCATES.

VOLUME II,

MAY, 1876.

NUMBER 3.

Reminiscences of a Collector.

BY "OOLOGIST."

THE surveyor said he saw several nests of some kind in the cypress trees of this swamp. The swamp was small and entirely flooded. It was studded thickly with cypresses and so intensely dark that one might be led to believe that it was midnight. I struck for the center. Several times I heard a hoarse *kronk, kronk*, but was unable to make out whether it was uttered by a bird or animal, until a Crane, likely a Great Blue Crane, flapped in a tree above me and made the place resound with his hoarse voice.

Thinks I, "This must be a very den of Herons," and was not long in confirming my idea, and I was not slow to discover that the place was a very paradise of Egrets' and Herons' eggs. The swamp was a very gloomy locality, and the gases that arose from its waters, which were about a foot deep, covering three or four feet of soft mud, are very injurious to the health.

Just as I had reached a little spot of earth, from which loomed two cypresses, a heavy fluttering among the branches startled me, and I was eager to ascertain its origin. On glancing upward, I saw nearly

a dozen nests, and the unearthly "*kronk*" of the Great Heron and the minor notes of smaller ones indicated their possessors. I found three nests of the former, containing in the aggregate nine eggs; I obtained two each of the Snowy and White Herons, and twenty-one eggs of our little Green Heron, numbers of which flew up from the water on my approach.

Not caring for so many eggs of the latter, I left most of them, and after placing the others in my game-bag I went on. The next nest I had the fortune to espy was a Fish Hawk's, containing three eggs, which were a great trophy to me. This nest was in a very high tree, and I was induced to climb it only by the presence of the bird. So far, thought I, so good, but if I could only have the fortune to strike something of a rarer nature, I would be quite well off. Noticing a very beautiful Warbler in a thick bunch of moss and limbs, though its peculiar behavior struck me as something extraordinary, I fired. The shot was an extra good one, for it not only killed the Warbler but a huge black snake, a part of which I had taken for vines and bushy twigs. As a natural consequence, the swamp soon resounded with hideous noises; the flapping of wings, the cries of the Herons and frogs and the splash of lizards and water snakes combining as if bent on making one's hair stand on end. But I was too enthusiastic

to be daunted with these incidents and after getting my bird passed on.

At the grand tumult my shot had created among these "denizens of the forest," I raised my eyes and endeavored to see whence the birds flew. Of course scores flew up from the water, but my attention was given particularly to those which rose from the trees, their presence there giving a fair indication of nests. I immediately proceeded in the direction of a lighter spot, where the trees were less thick and the sun penetrated. Just as I reached there, an interesting spectacle called forth my attention,—one that will be impressed on my memory for some time. At the moment I looked into the space, I heard a splash and an angry "kronk" and saw a Great Heron with his neck extended and part of a large fish in its mouth. A White-headed Eagle had evidently observed the fish from above, and knowing no doubt that it was a good opportunity for a meal, it pounced down, and just as the Heron had its head between its mandibles, the Eagle seized the protruding part in its talons. The Heron had a decided hold of the fish; so did the Eagle, and unable to meet the sudden and unexpected resistance, drew the bird into the water and fluttered down upon it. During this the Heron was making strenuous efforts at swallowing the fish, and the portion in the possession of the Eagle was quite small. I expected to witness a grand combat, and was in hopes of reporting the scene somewhat in this manner: Battle between an Eagle and Crane; the latter torn in pieces by the infuriated king of birds, &c., but my disappointment can scarcely be imagined when the cowardly bird releasing his hold flew away as quick as his pinions would carry him! The victorious Crane calmly swallowed the fish, though rather large, and coolly stationed himself on the identical spot where he was standing previous to his encounter. I was amazed and much interested, and pictured to myself the oft-related fierce wars with the Fish Hawk.

I meditated for some time on the incident I had witnessed, but was soon made aware

of the approach of a storm, which here is generally accompanied with a terrific wind, and I did not desire to be caught in a hurricane in the swamp, for the trees, being loose are often blown down. Accordingly I took a straight line for the coast, and on my way could not forbear shooting a beautiful Snowy Heron. Reaching our house just in time, I set about depriving my bird of its skin. I opened its stomach and ovaries to study their construction and contents, and in the former found the usual constituents of the Heron's food. Making a note of this I examined its posterior ovary. I found in the passage a well developed and shell-inclosed egg, which undoubtedly would have been deposited within half an hour. The inner ovary contained two undeveloped eggs. The skin of this bird was elegant, and as I was obliged to remain in the house, I took particular care to make a good specimen of it. Mr. Plenderhast, one of the botanists, asked me to mount it, and though its bulk would debar its safe transportation some, his request was complied with and he now has it in his library together with several others that McPherson and myself obtained.

TO BE CONTINUED.

Birds' Eggs and Nests.

SPECIES mentioned in this issue:—

Fish Hawk, American Swan. Royal Tern, Wilson's Tern, Burrowing Owl.

44. FISH HAWK.

Within the last five or six years the *P. carolinensis* has been found breeding exceedingly abundantly, especially on the Atlantic coasts. Their distribution certainly is extensive, and for the last two years, they have been breeding on our small streams, in out of the way localities.

The nest is nothing more than an immense layer of sticks and twigs, placed in the top of a tree near the water, and is often as low as fifteen feet from the ground, and not unfrequently in the vicinity of houses,

if near the coast. The eggs are three, often only two, and are dull white, blotched with umber brown, in most instances about the larger end, though they will often be completely covered. Three specimens collected in lower New Jersey measure 2.38 by 1.75, 2.28 by 1.65 and 2.25 by 1.70 inches.

561. AMERICAN SWAN.

The Swan breeds generally to the far north. It has been found however, about some of our northwestern lakes during the breeding season, which is good evidence that they breed there. The nest is built of sticks and swamp or marsh grass, which often comprises an immense structure. It is placed upon a tussock of stiff grass, near or at the water's edge. The eggs are from two to possibly five and white, generally bearing traces of nest washings, which give to them a buff appearance. Measurements: 4 to 4.75 inches in length by 2.50 to 2.90 in width. The American Swan was considered an entirely Arctic bird previous to the notes made a few years ago by Dr. Dall and Prof. Eyre, who confirmed their appearance in Alaska and Washington Terr. during the breeding season.

683. ROYAL TERN.

The distribution of the Royal Tern is quite extensive, and its breeding grounds likewise widely distributed. It nests upon the Atlantic coast from Virginia to Florida, where it is very abundant. It nests in the same manner as the other *Sterninae*, generally on rocky beaches, and making nothing that would justify the name of nest. The eggs are oviform, somewhat pyriform shaped, light buff and spotted all over with well defined markings of shaded umber black, thinly scattered and evenly distributed. A specimen collected in 1874 in Florida, measures 2.55 by 1.75, which measurement usually applies to all specimens. The bird circles and wheels above one's head when flushed from her nest in the same manner as most other Terns, thus presenting a good opportunity for identification.

689. WILSON'S TERN.

The nesting habits and eggs are well known to those who live along the Atlantic coast, anywhere from Labrador to Central America. The nest is composed of a few bits of sea grass; nothing at all is often the case. The eggs are deposited upon this to the number of from three to four. They are dark buff, covered with spots and blotches more or less in size and number, of chocolate and blackish brown, often forming a circle about the greater end. Two specimens measure as follows; 1.63 and 1.63, by 1.20 and 1.25 inches. Often they are quite squarely elliptical.

59. BURROWING OWL.

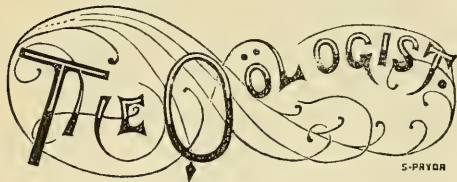
Dr. Coues says, "The Burrowing Owl is the only bird of its family inhabiting, in any numbers, the entirely treeless regions of the West, and may be considered characteristic of the plains." Its habit of breeding in the burrows of prairie dogs, and in common with rattlesnakes is almost universal wherever it is found, and as remarked above, it inhabits in abundance only the plains upon which are found these holes. They are diffused throughout the Mississippi Valley, more or less abundantly in different situations.

It seems peculiar that, though these birds are so abundant and their nests so common, that so few naturalists ever dug out any of their eggs, and yet it is so. The eggs are comparatively scarce in private collections, and are a desiderata striven for by all naturalists. Dr. Canfield says he once dug out a nest, which was an enlarged cavity at the extremity of a hole four feet long. He says the chamber was about a foot in diameter and contained seven young birds.

The eggs are usually five, though they frequently attain to the number of seven or eight, white, nearly spherical and about the size of those of the Belted Kingfisher, from which they may be distinguished by their shine and smoothness.

"OVUM."

TO BE CONTINUED.



Devoted to Birds and Birds' Eggs

SECOND PUBLICATION YEAR.

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THE OOLOGIST, Utica, N. Y.

MAY, 1876.

THE ADAPTATION OF FOOD TO DIFFERENT SPECIES OF BIRDS.

THE characteristics and habits of birds differ in different species, but as a rule, all the direct species of a family constitute a group alike in habits and characteristics, and all feeding mainly upon one general substance; but this is observed extensively

also with the several families constituent to certain orders. All birds however, are subject to a change in the substance of sustenance for various reasons, and when we say that such a bird lives upon caterpillars and insects, we indicate that such constitutes its main food,—such part of its subsistence which others of its family feed upon in common; though it not unfrequently, yes, habitually, devours other substances equally as substantial. Naturalists can invariably determine by the beak alone, of a bird, to what order it belongs, of what family it is a member, and in not a few cases, to what it owes its origin as a species; the beak of the bird, to use a figurative expression, is the *center of characteristic*; it is a key to its habits. When a new bird is discovered, a casual glance at its beak and feet will tell to what family it is tributary; its other characteristics are determined by the items of its discovery and its remaining order and family points.

A person studied in ornithology, can easily decide by the form and strength of a bird's beak, upon what it depends for food. Take for instance a Warbler. It is a gleaner, evidently; its bill is neither adapted to digging in the ground nor boring in trees; nor does it indicate in any way a raptorial bird or a seed eater. The nearest approach is the Flycatcher. Its habits combine both those of the Warbler to a certain degree and those of its true family. It will be observed, that the habits of the Wrens, Flycatchers, Thrushes and Swallows are akin to those of the Warblers, but the latter possess the one point pre-eminent above others, of gleaning, as we term it. They are all insect eaters, yet their method of obtaining food is in some particular different, though not always apparent, and this characteristic and the intervention of some minor points,—among which size figures the most prominent—determines the dissimilarity, else all would be recognized as a grand collective unit—a family. The difference between the larger birds is more apparent. The bird of prey and larger wading bird are as heterogeneous as could well be imagined. The

former possesses the strong curved beak and indicative talons of a fierce, powerful flesh eater; the latter, the beak, legs and feet of a different bird entirely—those of a bird accustomed to marshes and water courses, where its prey, without question, is of a lower order and of a nature to admit of its being devoured whole.

Our remarks being based upon the foregoing, how are birds enabled at times to devour something entirely contrary in form and nature to its own usual food? Because they are pressed. Warblers eat with avidity bread or particles of any doughy substance when constrained to do so, but it never has been our lot to observe them touch grain or seeds. When insects are plentiful they will eat nothing else. Woodpeckers, while in captivity (excepting perhaps the Flickers), are true to their characteristics; they refuse caterpillars, worms or any insect that cannot crawl upon a vertical surface, and eventually die. Yet Herons and Cranes in captivity will swallow almost anything from a button to a jackknife, if not well fed with proper morsels. The Eagle is often obliged to submit to the humiliating fare of beetles, caterpillars and such ignoble prey. A shoemaker living in this city once captured a Crane. He let it run at large in the store-room of his shop, and not having sufficient to eat, the bird was obliged to appropriate the most handy and suitable objects it could find, and with very little hesitation swallowed awls, pegs and bits of leather. Ultimately the bird died, and a dissection revealed the fact that its stomach was entirely devoid of anything but an awl, a few wooden pegs and a large quantity of plastering, which it had detached from the wall. A cage of Sparrows trapped at Syracuse two or three years since, lived very well on grass! We are indebted to a correspondent for this information. Sparrows, though grain-eaters, are also insectivorous, but their eagerness for the latter is much less observable, and grains are always preferred. Thus we see that though the adaptation of certain food is marked in different species of birds, they

are not always confined to it as a sole means of subsistence.

American Birds.

EXTRACTS

FROM

Popular Naturalists.

III

THE ROUGH-LEGGED HAWK.

Buteo lagopus,—Gmel.

THE Rough-legged Hawk seldom goes farther south along our Atlantic coast than the eastern portions of North Carolina, nor have I ever seen it to the west of the Alleghanies. It is a sluggish bird, and confines itself to the meadows and low grounds bordering the rivers and salt-marshes, along our bays and inlets. In such places you may see it perched on a stake, where it remains for hours at a time, unless some wounded bird comes in sight, when it sails after it, and secures it without manifesting much swiftness of flight. It feeds principally on moles, mice, and other small quadrupeds, and never attacks a Duck on the wing, although now and then it pursues a wounded one. When not alarmed, it usually flies low and sedately, and does not exhibit any of the courage and vigour so conspicuous in most other Hawks, suffering thousands of birds to pass without pursuing them. The greatest feat I have seen them perform was scrambling at the edge of the water to secure a lethargic frog.

They alight on trees to roost, but appear so hungry or indolent at all times, that they seldom retire to rest until after dusk. Their large eyes indeed seem to indicate their possession of the faculty of seeing at that late hour. I have frequently put up one, that seemed watching for food at the edge of a ditch, long after sunset. Whenever an opportunity offers, they eat to excess, and, like

the Turkey Buzzards and Carrion Crows, disgorge their food, to enable them to fly off. The species is more nocturnal in its habits than any other Hawk found in the United States.

M. Temminck says that this species frequents the north of Europe in autumn and winter, and it is at times seen in Holland. My friend Mr. Yarrell states, that, "although it has now been killed once or oftener in almost every county in England, it has rarely been known to breed there, and is usually obtained in the spring or autumn, when changing its latitude from south to north, or *vice versa*."

The number of meadow mice which this species destroys ought, one might think, to ensure it the protection of every husbandman; but so far is this from being the case, that in America it is shot on all occasions, simply because its presence frightens Mallards and other Ducks, which would alight on the ponds, along the shores of which the wily gunner is concealed; and in England it is caught in traps as well as shot, perhaps for no better reason than because it is a Hawk. But so scarce is it in the latter country, that I never could procure one in the flesh there.

My friend Mr. Swainson considered our bird in its immature plumage, in which he has figured it in the *Fauna Boreali-Americana*, as the true *Falco lagopus*; and Dr. Richardson, in the same work, speaks of it as follows:—"A specimen of this bird, in most perfect plumage, was killed in the month of September, by Mr. Drummond, on the Smoking river, one of the upper branches of the Peace river. It arrives in the Fur Countries in April or May, and, having reared its young, retires southward early in October. It winters on the banks of the Delaware and Schuylkill, returning to the north in the spring. It is by no means an uncommon bird in the districts through which the expedition travelled, but, being very shy, only one specimen was procured. A pair were seen at their nest, built of sticks, on a lofty tree, standing on a low, moist, alluvial point of land, almost

encircled by a bend of the Saskatchewan. They sailed round the spot in a wide circle, occasionally settling on the top of a tree, but were too wary to allow us to come within gunshot; so that, after spending much time in vain, we were fain to relinquish the chase. In the softness and fullness of its plumage, its feathered legs, and habits, this bird bears some resemblance to the Owls. It flies slowly, sits for a long time on the bough of a tree watching for mice, frogs, &c., and is often seen skimming over swampy pieces of ground, and hunting for its prey by the subdued daylight, which illuminates even the midnight hours in the high parallels of latitude."

Nothing is known respecting their propagation in the United States, and I must pass over this subject. They leave us in the beginning of March, and betake themselves to more northern countries; yet not one did either myself, or my youthful and enterprising party, observe on my late rambles in Labrador.

* * * * *

JOHN J. AUDUBON.

Foreign Birds.

The Apteryx; Kivi Kivi.

Apteryx australis.

BY F. J. DAVIS.

THIS, according to my idea, is the most curious, and by no means the least interesting of the feathered tribe. Its plumage consists of long, lancet-shaped feathers, which increase in length from the neck downward and have a loose web. The body is compact, neck short and thick, feet comparatively short and four toed. They have no tail and only rudimentary wings. The species I am now describing has a plumage of grayish brown, darkest on the back; the face is covered with hairs. This species is thirty inches long, of which the bill, from tip to base measures six inches.

The favorite habitation of this bird is spots closely covered with ferns, where it can easily conceal itself.

Owing to the ease with which it is captured, the Apteryx is rapidly becoming extinct, and probably will soon be numbered with the Dodo, Great Auk and others among the wonderful works of nature that were but are not now. It is hunted with dogs, and when closely pressed, takes refuge in crevices in rocks and holes in the ground, which it excavates for itself and in which it constructs its nest. When pursued it runs with great rapidity, carrying its head erect. It is almost exclusively nocturnal in its habits, and is hunted by torchlight by the natives of New Zealand, who highly prize it as a head-dress, so much so that it is very difficult to secure a skin of them. The natives also employ their feathers for the manufacture of artificial flies, which they use in much the same manner as our fishermen do, and for this purpose they must be excellent.

When attacked, it fights with great vigor, striking powerful blows with its feet and spurs, which are very strong. But little is known of its breeding habits. I have seen it stated that the bird sits under the egg instead of over it, first burying the egg, then digging under it, by which about one third of the lower end is exposed, and laying under the egg in such a manner that it comes in contact with the lower end of it, the egg as it were, coming through the roof of the nest or burrow. How true this is I cannot say. It was further stated that the egg corroborated this theory, as the egg was perfectly clean about two-thirds of its length, while about one third of the large end was greasy and discolored from contact with the upper part of the bird. Mr. E. Sayard furnishes Mr. Gould with the following information on the subject: "A native out shooting Pigeons discovered a Kivi's egg protruding out of a small hole at the root of a kauri tree. Removing the egg, he put his arm to the elbow up the hole and seized the parent bird. An old native who professes to know, states that

they lay but one egg at a time. The nest is merely a hole scraped out by the bird and generally about the roots of a tree, where the ground is dry. The egg is covered with leaves and moss, the decomposition of which evolves heat sufficient to bring forth the young. The process takes six weeks. When hatched, the mother by instinct is at hand to attend to her offspring." The egg of the Apteryx is unusually heavy in proportion to the weight of the female, being fully fourteen and a half ounces in weight. The Apteryx is a native of New Zealand, and subsists on worms, snails and insects, feeding in much the same manner as our Woodcock. The first Apteryx seen in England was presented to Dr. Shaw, and after his death came into the possession of the Earl of Derby. There are now several in the London Zoological Garden. Not long since, I mounted a fine specimen for Prof. C. H. F. Peters, the distinguished astronomer of the Transit of Venus Expedition, who brought it from the Kergulen Islands, and to whom I am indebted for many of the above interesting facts. There are two other varieties of the Apteryx not differing greatly from the above, viz: Mantell's Apteryx and Owen's Apteryx. The latter is nearly extinct, inhabiting the higher wooded valleys. It differs from the above in the bill, which is shorter and slenderer. The feathers especially are broader at the tip, and of a loose and hair-like texture.

Am. Oological Society.

Utica, N. Y., May 31st. 1876.

THE following are the estimates for printing the Society's Constitution, as per President's call:

H. T. Jones reports that Messrs. C. H. Stump & Co. will print the same for \$10.

E. L. Hudnut's estimate, \$13.

S. L. Willard reports that Curtiss & Childs' estimate is \$8.50 or \$9.

I would respectfully suggest that the lat-

ter estimate, being the lowest, be accepted.
S. L. Willard, *Secretary*.

MR. HOWLAND'S call for the appropriation has not been sufficiently accorded with yet. Please remit to H. T. Jones.

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VOLUME II,

JUNE, 1876.

NUMBER 4.

HAWK BREEDING AND MATING.

HAVING taken sixteen sets of the larger Hawks' eggs this spring and made their habits in the breeding season a special study for four years, I am led to remark upon two of their habits, more or less pronounced in certain individuals, but which are, on the whole, family characteristics. I allude in the first place, of course, to their love of locality. The most observant of collectors must have noticed that a pair of Hawks will breed year after year in the same woods, often indeed in the same nest, and if harried too closely, changing their tenement but not their neighborhood. When disturbed, they may shift only to the next favorable tree, go over a fence perchance, higher up a ravine or hillside, or to a remote corner of the same grove; but nothing short of death seems to make them desert their haunts. Clearly it is their home, and they will not be expatriated. In '73 I took two from a set of five Cooper's Hawk's eggs, leaving the rest as a decoy to the old birds, which I wished to shoot and have mounted. But after the first visit, I could not again get near the wary birds and the three young were reared in security. In '74 there were five more eggs, from which I took three, leaving two, and late in July,

revisiting the tree, the young, fully fledged, were seen sitting on the edge of their eyrie, trying their pinions. May 9th. '75 I took the entire set of five eggs from this pair, but this year have not yet had the pleasure of welcoming them home. In these same woods, three sets of eggs in as many seasons have been taken from a certain Red-shouldered Hawk's nest; last year they built on the next tree but one, and are now breeding but twenty rods away. A negro at Sunnyside for three years has taken fledged young for pets, from the nest of a Red-tailed Hawk. This year I took three eggs from this patriarchal tree, April 17th.; but nidification continued, and in a wholly new nest in a neighboring oak I relieved these Hawks of a second set of two eggs, May 8th. In one sense, even death itself may be said not to drive them away, and this brings me to my second topic,—the facility with which they are mated when one of a pair is killed. In '74 a pair of Red-tailed Hawks bred on Blue Hill. The male was caught in a steel trap, but the female raised her young, and came back mated last year to the same nest. She herself was then shot on her nest from a brush house. This year the male brought back a partner, a new nest was built in sight of the old one, and I took a set of two eggs with embryos from it, April 22nd. From the pair of Red-shouldered Hawks referred to above,

I shot the male Thursday, May 24th., and he is now in the hands of the taxidermist. I will freely wager that the female pairs and builds as usual next spring, and in her old haunts. The survivors often pair within a week or two, and from the despatch and facility with which it is done I incline to the belief that the old ones pair with the young of previous years. I have also noticed, and farmers have called my attention to the fact that there appeared to be three old Hawks to a nest. This, I fancy, goes to strengthen the inbreeding notion; and it is likely the outsider is a nest-mate of one of the pair, and in the event of one of the twain getting killed, at once takes its place. (In these remarks I do not include, of course, the Fish Hawks, whose breeding places are respected and the same for generations.) Still Hawks are proverbial for their wariness, and in fact I have found six nests this season in which they would not lay, disturbed, undoubtedly, by my visits. Even if the nest is untouched, a twig or limb of the tree would be broken, which Master Buteo's keen eyes are sure to detect. They are often shot from brush houses by farmers, but they soon learn discretion. May 4th. I took a set of four Broad-winged Hawk's eggs from a swamp maple, put two hen's eggs in the nest, and setting a steel minck-trap over the eggs, went away. Returning in an hour, the female was fast by both claws. The trap was re-set, and two days afterward, the male was found dead in the steel jaws, with both legs broken and plumage soiled. But the female is now nicely mounted in my study, and the set of eggs is beyond cavil, fully authenticated.

J. M. W.

Reminiscences of a Collector.

BY "OOLOGIST."

FOR the next two weeks I visited the neighboring islands, and succeeded in obtaining many very rare specimens of birds and eggs; of the former over forty species.

Among the most valuable birds I procured were one each of the Ruff (which by the way, I have ascertained since is only accidental on these coasts, and those seen were further north; and I regret very much that it with others was spoiled in transportation.), Ivory-billed Woodpecker, Carolina Tit and Wood Ibis, two each of the Bald Eagle and Turkey Vulture, three of the Chuck-will's-widow and eight or ten very rare Warblers. We had been on this island about six weeks, and after that visited each of the larger ones, my collection, in the mean time increasing greatly. Mr. McPherson shot a pair of Turtle Doves on the last day of our stay on the island which I prepared, and I can safely say that they are the handsomest and smoothest specimens in my collection.

On the first of July we sailed for home, reaching our destination on the morning of the fourth. Congratulations were exchanged, and my newly acquired specimens labelled and cabinetted.

'69 was my last collecting year. Since then business has rendered it impracticable; still I have not lost my interest in ornithology, and never will. My annual vacations always tend toward the wildest part of the country, where I can study the birds to the best advantage, and from time to time acquire new additions to my cabinet.

CONCLUDED.

Birds' Eggs and Nests.

SPECIES mentioned in this issue:—

Mocking Bird, Wilson's Plover, Quail, California Quail, Frigate Pelican.

253. MOCKING BIRD.

This bird inhabits the Southern States, where it is so abundant as often to be regarded as an absolute pest to the planters, and in some districts they employ various means of destroying them. They build in bushes and low trees, often near houses and nearly always in close proximity to plantations. The nest is constructed of fine

twigs, fibrous roots and dried grasses and straws, cemented with a little mud. The eggs are usually four, ovoidal, and pale greenish, blotched with reddish and light umber brown. They are easily recognizable. Four specimens from North Carolina measure .85 by .62, .85 by .65, .90 by .65 and 1 by .75 inches.

506. WILSON'S PLOVER.

An egg of this bird, taken in New Jersey measures 1.32 by one inch. The eggs of this species are handsomer than those of most other plover, being more ovoidal and regular in shape and markings, wanting the awkward pyriform so prevalent in those of the Sandpipers, Snipe and Plover in general. A light creamy buff forms the primary color, which is spotted with umber brown, distributed over the entire surface, perhaps approaching to blotches about the larger end. Nest is same as those of other Plover. It consists of straws and a few dry rootlets heaped together among the tall grass in a field, at or near the water. Often the nest is concealed simply by a tuft of bushy weeds or grass. It is commoner on our Atlantic coasts than inland.

471. QUAIL.

Our Common or Virginia Quail now inhabits mainly the south and west, but few remaining in the Eastern and Middle States. They lay from eight to fifteen eggs, white, often coated with a buff nest exudence, shortly pyriform and measuring 1.23 by .95 of an inch. Various names are given this bird, as Bob White, Partridge, Common Quail and Little Corporal Partridge.

474. CALIFORNIA QUAIL.

There is much variation between the eggs of this beautiful bird and the above. In all cases they are spotted or blotched with different shades of brown, from light yellowish sienna to dark umber, though an intermediate tint is usually the case. In size they are about the same as those last described, perhaps a trifle larger, and are more oval. The markings are often singularly distributed, sometimes forming figures of

animals and birds; and sometimes the little end will be covered by seemingly one dark patch. It inhabits the valleys of California in considerable numbers.

619. FRIGATE PELICAN.

More commonly known as the Man-of-war Bird. It inhabits the entire tropical globe, and is quite dissimilar from the other Pelicans. They are powerful birds, and are said to have been seen over one thousand miles from land, pursuing flying fish, and so rapid is the descent upon their prey that Audubon describes it to be "with the velocity of a meteor."

In North America they inhabit the coasts of the South Atlantic and Gulf States, where they breed in large numbers, especially on the Florida Keys, making a huge nest of sticks and limbs, upon which are laid two or three eggs. These are white, smoother and clearer than those of either the White or Brown Pelican, but show the same chalky appearance. A specimen from one of the Floridas measures 2.75 by 1.80.

TO BE CONTINUED. "OVUM."

Is this not Decisive?—For the past three or four years, there has been considerable controversy concerning the eggs and nest of our Great Northern Shrike. We hear that many of the most diligent have failed to discover its nest in this State, why, we are unable to say. The bird alluded to breeds throughout New York State, and in some places quite abundantly. In 1874, four sets of eggs were taken in Oneida county by a person who is reliable authority, the bird being identified by being obtained. In 1875, six sets were taken in the same county, and this year we took two sets of respectively five and three eggs, easily recognizing the bird, which to anyone who is a judge of color is readily recognizable from the Loggerhead Shrike fifteen yards away. We state this to dispell the misconception that still exists, and have no hesitancy in expressing our opinion that the bird has been misrepresented.



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SECOND PUBLICATION YEAR.

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THE OOLOGIST, Utica, N. Y.

JUNE, 1876.

*THE PLUMAGE OF BIRDS AS TO
GEOGRAPHICAL DISTRIBUTION.*

LATITUDE affects the plumage of birds the same as the clothing of man; that is, the adaptation to heat or cold are identical. The only difference is that the one is natural, the other assumed. Both are for a common object. It will be noticed

that the *avis* inhabitants of the colder regions have a very soft and thick plumage, and this quality increases or decreases with the extremes of heat or cold. The tropical bird, in most instances, possesses a peculiar thinness and coarseness of plumage, prevalent in some species more than in others, this quality increasing in harshness of course, in the larger birds. This homogeneity is observed more readily in two birds of the same species inhabiting the extremes of latitude. The degree of characteristic is natural, and the adaptation one of nature's best accomplishments; and though it is not so contrasted as in the instance of man's clothing, it is nevertheless true, and with the structural organism and distinguishing habits of the bird, completes its general outline of life and breath. It is an indispensable constituent of the bird's life in a very applied sense. True, many birds of tropical latitudes have an abundance of plumage; still, in texture it is unlike that of the bird of more northern distribution, inasmuch as it is a loose, coarse, airy collection of feathers, particularly adapted to the requirements of the climate. Its northern congener has the plumage thick, close, fine and in all respects constituted to resist cold. Land and water birds, in a way also differ in plumage, especially in the texture, which, with regard to the latter, is always hard heavy and either scaly or hairlike. The elements in this case, cause the character of the plumage, identical with the climate as referred to.

Another peculiarity of latitudinal distribution is the effect, if it might so be termed, upon the coloration and shade of the plumage of birds. And this is no less marked than the one above alluded to; more so if either way. Whether it is the climate directly, or the peculiarities it compels birds to assume that causes this, is a matter for consideration, but no one can fail to recognize the marked dissimilarity that exists in the shade and color of the tropical bird and the one inhabiting the Arctic or Antarctic regions. The former exhibits all the beautiful and gorgeous colors imaginable, and

the sheen of its splendidly arrayed plumage casts the most dazzling scintillations and shades of color; and it possesses also the most exquisite form and graceful habits. The reverse could not be more strongly portrayed than in the plain, unassuming dress of the latter, its slow, quiet and decisive movements and unpretentious form presenting a model of the groups of the extreme cold latitudes.

What direct influence does climate have upon birds to produce this bold and varying characteristic? Yet these peculiarities are not applicable to birds alone; they prevail in all organic substances, but the traces are more or less obscure in certain individual bodies, the intermediary or temperate latitudes showing but little of either characteristic, and yet some of both. The variation in the plumage of birds is probably one of the most prominent traits observable, affected by their geographical distribution.

THE attention of our readers is called to our advertisers. Collectors contemplating an increase in their number of specimens will profit by patronizing them, as they are all reliable dealers and their goods first class. Mr. Hudnut has a very good variety of eggs and drills at very low prices. Mr. Coles and Mr. Wilson likewise. Send for their lists: Mr. Coles deals extensively in bird-skins. Hobson's Patent Bird's Egg Protector will, we hope, become popular under the management of Mr. Collins.

American Birds.

The *Ectopistes migratoria*, Sw. *Wild Pigeon.*

AT the time of this writing (April 27), I have just returned from a week's shooting among the Wild Pigeon, a large colony of which are nesting a short distance from the village of Shelby in northern Michigan. The laws of the state pro-

hibit any person from shooting within five miles of the nesting places; or netting within two miles, and the law is strictly enforced.

The nesting covers a space of country some twelve miles in length, by three in width. The nests are situated from thirty to sixty feet from the ground, and the outside is composed of coarse sticks, half the size of one's little finger, while the inside is lined with fine twigs, in some instances with feathers. The nests are quite closely compacted, and all those which I examined contained but one egg. Audubon says this Pigeon lays but one egg when the sitting commences; now Wilson, quite as correct an ornithologist, says it lays *two*. A brother naturalist informs me that during the summer of 1874 he found a nest containing one young bird, evidently not more than two days old, and also one egg.

During the breeding season the birds make three flights daily. At the first sign of light the male birds fly out to feed, returning about ten o'clock, and during this flight not a female is to be seen; then the females feed and return at two in the afternoon, their mates again feeding after that. When the females are feeding, the males sit on the eggs, and it is confirmed by old sportsmen and some naturalists that the female may sit on one nest in the forenoon and on another in the afternoon, the nesting being conducted on the "free love system." I don't think the above has ever been proven by any reliable person as yet, as it is a difficult matter to decide. During my own observations I have been unable to ascertain the real truth.

Audubon says the Wild Pigeon has traveled a distance of 300 miles in about six hours, which it will be seen is at the rate of *one mile in one minute!* The same author also makes a calculation of a mass of Wild Pigeons Wilson came in contact with, and says that the whole length of the mass was 240 miles, and that the number composing it must have amounted to at least 2,230,272,000 Pigeons, and further remarks that as large as the number seemed,

it was most probably below the actual amount. Can you think how much food such a crowd would require? Wilson thought of it, and allowing each bird but a half pint of food per day, he found the whole quantity would be 17,424,000 bushels daily.

The great colony of Pigeons leave the young when a few days old and commence a new nesting, while a few of the males remain with the young until they are able to fly.

CHAS. W. GUNN.

The Black-throated Bunting.

(*Euspiza americana.*)

THIS bird is very abundant in this vicinity (Ill.), and may be seen perched on hedges and fences, as you walk in any direction.

It is about the size of the Chipping Sparrow, feathers on the back about similar in color; breast of a yellowish tint, with a black spot or collar on the throat. Its song does not amount to much, being short and weak, soon growing monotonous. The male during the season of incubation perches on the highest place attainable near his nest, and there cheers his mate with the knowledge of his presence.

It arrives from the south about the last of April, and by the middle or last of May the nest is built and the eggs are laid. The first nest I collected this year on the 28th of May contained four fresh eggs, and one collected on the 16th of June contained five eggs with small embryos. The nest is made of dried spears of grass, straw, small roots and corn husks, and one nest which I have has quite a large piece of newspaper woven in. It is lined with fine grass and black horsehair, and is about 4 inches high, 2½ inches deep, 3 inches inside diameter and 3½ inches outside diameter. The nest is generally found in a hedge or clump of grass. In the former it is placed about two or three feet from the ground, and is quite easy to find; if in the latter, it is placed about eight inches from the ground and can sel-

dom be found unless you happen to pass so near as to scare the bird off. Dr. Coues says in his "Birds of the N. W." that "the nest is almost invariably placed on the ground, but occasionally in a thick grass clump," but I have not been able to find a single one on the ground. I have collected ten nests of this species this season, and all but two have been found in hedges, and those two were found one about eight inches and the other about a foot from the ground in a clump of grass. The eggs are four or five in number and of the same shade of blue as those of the Blue Bird. I have read that they are sometimes spotted, but have never seen any. One set of four eggs measures .87 by .68; .87 by .68; .81 by .62; and .81 by .68 inches. Another set of five eggs each measure .75 by .62 inches. Most birds, when they think their nest is in danger will endeavor to entice the intruder away. This bird on the contrary, seems to lead the way to its nest, as in one instance when I was out, the male bird flew from bush to bush, keeping only a couple of yards away, until finally I found the nest.

I have found nests as late as the 21st of June, containing a fresh egg, and it was evident the bird had not finished laying. Judging from this, I should set the time of laying as between the middle of May and last of June, making nearly a month and a half during which time the collector would be apt to find their nests and eggs. It is called Little Field Lark in Ohio, and in this State, Dick-sissel and Judas-bird. Not having observed the time of its migration, I cannot say how long it remains with us, but judge not later than September or October.

"EUSPIZA."

THE Leatherstocking Club of Oswego, N. Y., held a pigeon shoot on May 19:

A LARGE Gray Eagle was taken by a young man near Chenango Lake, N. Y., recently, measuring eight feet in extent.

The Blue-gray Gnatcatcher. (*Poliophtila cerulea*.)

CHAS. E. COLES.

THIS is one of our rare and beautiful species. It appears in lower Michigan from the south early in May and pairs shortly afterward. They commence to build from the latter part of May to the first of June. The female sits fourteen days and produces one brood in a season; though they often lay a second set of eggs if disturbed. It is shy and difficult of approach and seems ever on the alert for danger. During its residence here it may be seen in the tops of tall oak trees actively darting from bough to bough through the foliage, snapping at flies and other insects, in the wildest and most thickly wooded localities, uttering its short and feeble song, a repetition of the syllables *te, te, tee, tee*. This species has all the agility and many of the habits of the Flycatcher.

My discovery of the nest of this species was on the afternoon of June 7th 1873. While out collecting, my attention was called to the sudden notes of this bird from a large oak tree above me. Thinking that she had a nest in the vicinity I retired to a short distance, in order to allow her time to get settled, then silently approaching I flushed her from the nest, she meanwhile pouring forth her alarming notes. The nest contained four fresh eggs and one of the Cow Bird (*Moluthrus pecoris*) slightly incubated. It was situated in a large oak, on a small limb and all of fifty feet from the ground as near as I can judge. This nest was composed of stems of old leaves, blossoms of old weeds, and covered on the outside with bluish lichens, which gave it the appearance of a bunch of moss or small knot. It was deeply hollowed and lined with horse-hairs.

I have since had no difficulty in finding these nests, and have taken no less than twenty-five this year, and from the twenty-five succeeded in getting twenty-one safely home. With the exception of the nest of

the Humming Bird, the nest of this species is the most beautiful specimen of bird architecture that I have ever met.

PARTIES spending their summer vacations in the North Woods and Adirondacks, in the northern part of New York, say that the *Corvus carnivorus* (Raven) is very plentiful in those districts.

RUFFED GROUSE cannot be shot in this State until the first of September. See that the law is enforced in your district and there will be no scarcity of birds during the shooting season.

WOODCOCK are very plentiful this year throughout the Middle States. We hear of some very good bags made in this vicinity since the fourth of July that confirm the fact.

WE have a large stock of new and desirable eggs and skins, among which are many rare specimens. A new catalogue has been issued which collectors will find convenient for reference.

Am. Oological Society.

TREASURER Jones reports a delinquency on the part of the members of the Society to remit the amount of President Howland's call (40 cents). Thus far his receipts are not at all as large as they should be.

Please remit.

As soon as possible a report will be made showing whether or not the estimate for printing the constitution has been accepted.

S. L. Willard, *Secy.*

CORRESPONDENCE.

J. MACMORAN.—For the benefit of those of our subscribers who wish to make additions to their collections, we will issue a price list on the tenth of August, when one will be sent you.

GENERAL TOPICS.

—THE Kansas Academy of Science has issued a third edition of Prof. Snow's list of the birds of Kansas. According to the list the State claims 294 species.

—THE Central City Club of Syracuse, N. Y., has again been successful in winning the famous Dean Richmond cup.

—THE third bulletin of the National Museum contains an interesting account of a singular bird called the Sheath-bill or *Chionis minor* by Drs. Coues and Kidder. This bird forms a character whose identity of position has hitherto been undetermined, but it is found upon investigation to hold an intermediary position between the Gulls and Plovers. The bird characterizes an ancient type, of which itself is a remnant. The investigations included the conditions of its residence, which was isolated and quite unpropitious of any variation.

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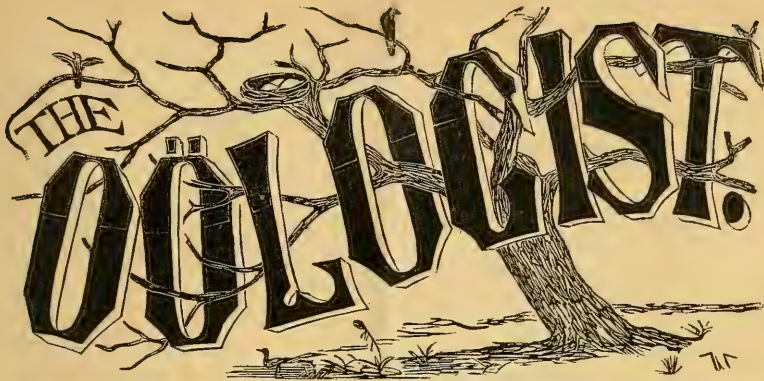
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ISSUED IN BEHALF OF THE SCIENCE WHICH IT ADVOCATES.

VOLUME II,

JULY, 1876.

NUMBER 5.

Birds' Eggs and Nests.

SPECIES mentioned in this issue :—

Plumed Quail, Blue Quail, Black-headed Grosbeak, Blue Grosbeak, Bullock's Oriole, Black-bellied Plover, Semipalmated Plover.

475. PLUMED QUAIL,

Known also as Gambel's Quail and Gambel's Partridge. It is an inhabitant of New Mexico, Arizona, Texas and Mexico, and is very abundant in the two first and last localities, being replaced east of the Rio Pecos in Texas by another species, the *Cyrtonyx massena*. It is a very beautiful bird and is a representative of the game birds of North America.

The nest is a simple affair, consisting of bits of grasses and leaf stems placed in a depression scratched for the purpose. The place usually selected is a secluded, moist spot, fringed with tall grasses and weeds and strewn about with aged and moss-covered logs. The usual nestful of eggs is from ten to fifteen. Dr. Coues says that they "cannot be distinguished from those of the California Quail. They measure an inch and a quarter in length by an inch in breadth, and are almost pyramidal in shape, the larger end flattish and very broad, the other narrow and pointed. The color is a

buff or rich creamy, dotted and spotted all over with bright brown, and splashed here and there with large blotches of the same."

476. BLUE QUAIL,

Called also the Blue Partridge and Scalded Partridge. It is a native of lower Arizona; is found throughout the region of the valley of the Rio Grande and other points in proximity. It is also found in Mexico, though how far south I cannot say. As far as I am able to learn, the nest is composed of the usual fragments of dried vegetation, such as grasses, twigs &c., and is placed upon the ground in a sheltered position. The eggs are of the usual number, buff white, thickly specked with minute dots of light brown and measure one and one fifth by one inch.

381. BLACK-HEADED GROSBEEK.

This bird is commonly found in the central-western portions of the United States, where it breeds more or less abundantly. It is a handsome bird, lively in habits and a general favorite. It is stated that the nest is like that of our Rose-breasted Grosbeak and the situation the same. Dr. Cooper mentions a nest found in an alder but few feet from the ground. Dr. Heermann says that the nest is placed in bushes, and Mr. Merriam cites a nest in a small tree, five feet from the ground. In all these instances the composition and make-

up of the nest is substantially the same, the main constituents being pieces of vine bark, stiff, dry grass and rootlets thrown together loosely.

The eggs are four, pale light green, inclining to dull gray, spotted all over with dots and small splashes of a color between light walnut and umber brown, collected generally in a perceptible circle about the large end. Size of one specimen, 1.00 by .70. Like others they are apt to vary in shape, the size above being quite long and narrow. They are less thickly spotted and show a duller primary tint than those of the Rose-breasted Grosbeak.

382. BLUE GROSBK.

This bird is an inhabitant of the southern and warmer parts of the United States. It breeds in the same manner as the other Grosbeaks, building the nest of fine twigs, rootlets and perhaps other equally answerable substances, and placing it in a low shrub or slim sapling. The eggs are pale whitish blue with a faint neutral tint, without markings. Two specimens measure .80 by .65 and .85 by .65 inch.

416. BULLOCK'S ORIOLE.

This species is found over the greater part of western North America, where it is more common than is generally believed. It builds its nest of various materials, according to the productions of the locality. The principal substances are the silky down of plants, very fine, pliable bark, light pieces of dry grass, feathers, hairs, shreds of the inner bark of trees; in fact anything that can be used to advantage. It is suspended from the tip of a limb in the manner of the Baltimore Oriole. Eggs four or five, pale leaden blue-white, covered with a series of fine lines and narrow spots of black, which wander about the shell in a beautiful manner.

510. BLACK-BELLIED PLOVER.

This species is found throughout the United States, though more abundantly on the sea-coasts than in the interior. The bird is rather scarce and but few sets of

eggs have been taken. The eggs are large—of about 2.15 by 1.40 inches,—brownish drab, covered with markings of brownish black and umber. The marks about the large end are often confluent. The nest is a depression in the ground lined with dried grasses.

507. SEMIPALMATED PLOVER

Breeds in the usual manner. The eggs are usually four, light brownish drab, duller in some specimens and always fading after blown. Over this are distributed numerous markings of umber, very decided in outline. Other markings are observable, though very faint and formed in the shell. Measurements: from one and one third by one inch, to one and one fifth by nine tenths of an inch. "OVUM."

TO BE CONTINUED.

Do Insects Harm Eggs?

INSECTS are troublesome pests and but a few collections escape their ravages. The insect usually frequenting egg cabinets is a small, gray moth, the larva of which is the pest. They will apply at the smallest cracks and generally succeed in effecting an entrance. In this larva state they enter the eggs, and not unfrequently a collector may be surprised to find six or seven imbedded in a mass of mouse-colored substance in a single large egg. Now, do they harm the egg? In some instances they certainly do, in others probably they do not, as depends upon the size of the egg and the state of its shell inside. Not long ago, we were made aware of the fact that three sets of Humming Birds' eggs were attacked. Nothing could be done to drive them out and the eggs were ruined: literally eaten up. Shortly after we discovered the above, there were appearances of this noxious pest in an egg of the Murre. Being anxious, we broke open the egg and found therein two live insects and the cast-off skins of others. The egg was not thoroughly blown. A small strip of membrane

and a large piece of the inner skin of the shell were found, both of which were eaten considerably. Beyond a spot on the inside that appeared to have been gnawed, the shell was not harmed. Of fifty specimens then examined not an insect could be found. The fact is, if eggs were properly blown, especially the chalky eggs of sea birds, there would be less insects, for they rarely if ever trouble clean eggs. If such eggs as Humming Birds', Warblers' and others possessing frail shells be allowed to go into the cabinet half blown, they will be ruined, for the insect eats shell and all in cases where it is not strong enough to resist its ravages. Strong shelled eggs are less liable to be damaged, but where a spot of neglected membrane is left to dry adhered to the shell, there is a probability of the shell being gnawed in that spot. Since overturning the Murre's egg, we have had no difficulty in keeping free from the marauders, and if any of our friends are troubled we would recommend two preventives, or rather a caution and a preventive. Allow no eggs that are anything but entirely clean, in your cabinet; if you have valuable eggs that are not entirely free from membranous substance or dried skin, and cannot extract it without danger to the specimen, make a free use of camphor. It is a good remedy and will check the forages of the insects, whether they be harmless or not.

An Unprofitable Tenant.

EVERY collector can tell what a nuisance the Cow Bird is, from the varied experience of finding its eggs in smaller birds' nests. Those commonly appropriated belong to birds inferior in size to themselves, though not always so. The unfortunate Warbler, Sparrow, Vireo or Flycatcher are obliged to submit to the unasked-for tenant, and in common with their own must rear the clumsy young of the Cow Bird, often as many as two or three at a time. There are instances of the bold-

ness of this bird in occupying the nests of birds even larger than itself, but these are very few. A friend brought us a Cedar Bird's nest containing a Cow Bird's egg, and once in a while a Thrush's nest is found to contain one or two, but the Robin and King Bird are not troubled, as the Cow Bird is cowardly and like the majority of such people, delight to harass smaller ones than themselves.

But few instances of more than two eggs being found at one time in a nest are known yet doubtless it is a common practice to lay three, though as many as four probably never have been taken. Dr. Coues mentions a Towhee's nest containing three Cow Bird's and two of the rightful owners' eggs, and soliloquizes on the discouraging prospects of the scene. A Yellow Warbler's nest will sometimes, upon investigation, turn out two or three conquered Cow Bird's eggs, imbedded in its center, and very frequently Vireos' nests contain in addition to its own eggs two others, whose identity is always recognized. It has puzzled many persons why this bird does not honestly build a nest and not molest other birds, but it is a problem that, if regarded as other than simply a peculiar characteristic of the bird, will remain undecided for some time to come. The European Cuckoo pursues the same course of habitually using other birds' nests.

THE English Sparrow is found to breed nearly the year round in this country. Certainly as many as five broods are reported, and persons have observed young birds from March to November. An exchange remarks that if they continue much longer to propagate with such rapidity, there will be a "Sparrow plague," such as they have in Germany and some portions of France.

Now comes a letter from the west stating that the writer is of the belief that no Shrikes' eggs were ever collected save those of the Loggerhead. What next?



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JULY, 1876.

ATTRIBUTES TO SHYNESS.

SHYNESS in birds does not arise from the fact of its being simply a characteristic of the bird; it is the outgrowth of many peculiarities, more or less noticeable where they are predominant. The main points affecting this are easily traceable and when studied to some extent resolve themselves into reasonable attributes. In con-

sidering a bird's habits, ornithologists seldom pass over that part of the schedule relating to shyness, but no regard is shown for the reason, all undoubtedly supposing it arises from either of only two causes, viz: the natural faculties of the bird, such as sight, smell and hearing, which of course lend a more active sense of danger than birds of less acute faculties would experience, and this is more properly wariness, for it is not similar to the innocent disregard of the smaller birds, whose instinctive practice of keeping out of the reach of man is not attendant with habitual expectation of danger. Secondly the prominence of the larger birds renders them the universal object of pursuit, and being driven about and continually harassed by inexperienced gunners, they naturally assume an attitude of shyness, and as these are the birds usually possessing the strongest senses, they habitually employ them to guard against danger. Of course, the underlying degree of shyness is based upon the peculiarities of different birds, and is "hereditary," the members of each family as a general thing forming a body of constituents in which a certain grade of shyness is perceptibly the same throughout. This we are supposed to consider already allowed.

Dr. Coues remarks: "The qualities that birds possess for self-preservation may be called *wariness* in large birds, *shyness* in small ones. The former make off knowingly from a suspicious object; the latter fly from anything that is strange to them, be it dangerous or not." This is strikingly true, though in many cases the order seems to be reversed, especially in wild localities. Still, beyond the two attributes already figured, there are others, among which are locality, situation, the scarcity or abundance of the bird, resources for food, &c. Then taking a bird accustomed to wild, remote places, it will be found to be extremely shy upon accidentally visiting populous districts. In many portions of the country where Eagles are common, they regard man with but little timidity and do not exhibit any of the shyness of a single

unlucky individual in a populous district, that, as Dr. C. further remarks, employs most of his time in endeavoring to save his skin. Scarce birds are naturally shy, and this is particularly noticeable in comparison to an abundance of other species, all things being equal. Where there is plenty of food, all birds are more or less shy, but when a scarcity of food is prevalent, their shyness is overcome by hunger and they evince a disregard for objects that they would otherwise fly from. Natural shyness is overcome by one's constant indifference in passing a bird, but the moment a gun is pointed and fired at it, if unsuccessful, the bird deems it a duty and a necessity to keep out of its reach thereafter. There are certain birds whose proverbial wariness cannot be overcome. Of this class are the *Ardeidae* or Herons, probably the most wary and timid birds known. Their sharp faculties of sight and hearing render them a difficult bird to approach, and though they may be undisturbed for years, the same sense of self-preservation seems to compel them to flight on the slightest suspicion of wrong.

Foreign Birds.

The Capercali. (*Tetrao urogallus.*)

BY F. J. DAVIS.

IN looking over my articles on foreign birds, I find I have been neglectful of the foreign game birds, and it is not unfitting that I should commence my mention of them with this, the most magnificent of all the Grouse. The crown of the head is of a blackish hue; the nape deep gray, marked with undulating black lines; back pale black, dotted with gray and reddish brown; tail black, dotted with white; breast glossy steel green, the remaining under plumage spotted with white and black. The eye is brown, encircled with a bright red skin. Beak grayish-white. This bird

is from twenty-six to twenty-nine inches in length, with an extent of from fifty-two to fifty-six inches.

The Capercali inhabits nearly all of Norway and Sweden, as far north as the pine tree flourishes—very near the North Cape. They are less abundant in the southern provinces of Sweden. Their favorite haunts are deep fir forests, and they are seldom found in small covers. It is stated that those breeding on the sides of mountains or in the more open country, descend to lower ground in the event of deep snow. On the contrary, such as breed in the larger forests remain there all the year. The principal food of this bird consists of the leaves and tender shoots of the Scotch fir, rarely of the spruce. They also eat juniper and blue berries and various other berries found in the northern forests. Occasionally, like our Ruffed Grouse, they consume birch buds; the young subsist upon worms and insects. Like many other Grouse, the Capercali has a habit of calling the females in the spring. Often when the ground is covered with snow, the cock takes his position on a pine and commences his love songs, as "play," as it is called, for the purpose of calling the hens. This continues from the dawn of day until after sunrise, and from a little after sunset till darkness sets in; the time however depends more or less upon the state of the weather and the advancement of the season. Whilst he is playing, his wings droop, his neck is stretched out, tail spread like a fan, feathers ruffled, and his whole appearance resembles an angry turkey cock. His call resembles at first the words *peller, peller*, which he repeats at intervals and increases in rapidity as he proceeds, until after about a minute or so, he gulps down the last few notes and finishes by drawing in his breath. During the latter part of the performance, which lasts but a few seconds, he appears to be worked up in a perfect agony of passion. On hearing the call of the cock, the hens utter a cry sounding like a guttural utterance of *gock, gock, gock*, and assemble from all parts of the forest, at which the

cock descends from his perch and joins his female friends on the ground.

The Capercali has, like all other Grouse, certain places which may be called his playing grounds. These are, however, of some little extent, and unless much pursued his call may be heard in the spring year after year. Several Capercali may be heard at the same time on the playing ground. The young or birds of the preceding year are not allowed by the old ones to play, but should they get killed, the young usually take their places. Combats, I presume, not unfrequently occur, though I can find no account of one ever having been observed. The hen bird makes a nest on the ground and lays from six to twelve eggs, measuring 2.25 by 1.66 inches in length and breadth respectively. They are pale reddish yellow-brown, entirely spotted with two shades of deeper brown. It is said to sit four weeks, and the young keep with the hen until the approach of winter; the young cocks however separate from the mother before the hens. When the female commences sitting, the cock deserts her and hides among the brushwood while moulting, the female alone hatching and rearing the young. Mr. Lloyd says: "Except when the snow is deep, the Capercali is much upon the ground in the day-time; very commonly, however, he sits in the pines, sometimes on the very uppermost branches. During the night he generally roosts in the trees, but if the winter be very severe he not unfrequently buries himself in the snow. Considering the large size of the bird, his flight is not particularly heavy or noisy. Indeed I have not only seen the Capercali at a very considerable height in the air, but have known him to take a flight of several miles at a time."

The cocks do not attain their growth until the third year or upwards, from which it may be inferred that they live to a great age. The old ones are easily distinguished by their large size and glossy plumage, and the former depends upon the latitude in which they are found. Pennant, in his "British Zoology," says: "This species is

found in no other part of Great Britain than the Highlands of Scotland north of Juveness, and is very rare even in those parts." In 1836 Mr. Lloyd procured for Sir T. Fowle Buxton forty-nine Capercali, male and female, which were afterward presented to his friend Lord Breadalbane, by whom they were reared with such success that about Taymouth castle they became as common as the Black Cock, and spread all over the wooded parts of the Highlands as far as Aberdeen. They have grown so tame that a carriage may be driven under the trees on which the hens are perched without their taking the least notice. The flesh of the Capercali is in considerable request for the table. It is more palatable during the autumn months, when it feeds mostly on berries and like fruits, than in the winter, as its flesh then partakes of the flavor of the pine leaves on which it feeds. In Wermeland and the adjacent country, it is a standing dish in winter at the houses of the gentry, who usually lay in an ample supply of these birds at the setting in of the frost. On the occasion of births, marriages and deaths with the peasantry, the Capercali is looked upon as a needful addition to the feast. With them it is eaten simply boiled, or first par-boiled and afterward roasted as hard as a stone, in which state it will keep for weeks or months.

Could this noble bird be introduced into this country, what a welcome addition to our game birds it would be, but such an undertaking is improbable if not impossible.

THE Guacharo of Baron Humboldt, a bird inhabiting South America, is a singular type of the *Caprimulgidae*, from the young of which large quantities of oil are gathered by the natives every year. These young birds possess a very fatty substance, which is melted, forming a very pure, inodorous oil, used for various purposes. They nest in funnel-shaped holes bored in the sides of precipitous cliffs.

American Birds.

The Killdeer Plover.

CHAS. E. COLES.

THIS species is one of our most numerous and well known Plovers. They arrive in the Northern States from the southern regions early in spring, and are a constant resident in most all parts of the United States. This species may be found on the borders of lakes, rivers, marshes and open ground, seeking its fare of insects, worms, beetles etc. They are exceedingly fond of associating with other birds of similar habits, and during the day remain silent unless disturbed by the sportsman or collector, their natural enemies. At the approach of danger, the alarm cry is given and the rest all join until the noise becomes deafening. It is known by its sharp and piercing note, resembling the word "*killdeer*," from which it derives its name and which is uttered not only during the day, but also during the night. The female builds her nest on the ground, scraping together a few dry leaves. It is loosely constructed and sometimes placed in the hollows made by horses' hoofs. This nest is often formed on the shore, but more frequently in the clover fields and though often placed apart, they not unfrequently are found in communities. While the female is sitting the male frequently supplies her with food, although she occasionally obtains it herself. As soon as the young are able to shift for themselves, they follow the habits of their parents and may be seen among them. After the breeding season this species moves in flocks of from ten to thirty, which affords the gunner an excellent chance to fill his bag, as they generally fly low. This bird is highly prized by some as an article of food, especially in the fall, when the young birds are fat and plump.

As winter approaches they migrate south

returning in spring to the delight of the sportsman and the joy of the collector. The latter in all cases, will have some difficulty in discovering the nest, as the bird is exceedingly shy and vigilant, allowing no one to approach within five or ten rods. If she suspects danger, she will leave her nest and make off through the grass until a good distance from it before she will rise, making a piteous cry and acting as if she was wounded.

Am. Oological Society.

MEMBERS OF THE A. O. S.

The Treasurer has received but two or three remittances on the President's call. If our Society is to be self-sustaining, we must have money when it is wanted. I now issue my second and last call, and hope that it may bring a response from all the members.

J. S. Howland, *Pres't.*

IN order to ensure the smooth working of our Society the President's calls should be obeyed as far as consistent with propriety, and as all the objects sought for are reasonable, and all calls likewise, why not live up to them? We are now in a way that tends to no progress as far as the objects to be attained are concerned, and a consideration has been held that the Constitution is the first and foremost object. After we possess that, and each member *knows* just what "we are" and what "we are for," all minds will be trebly interested. Let Treasurer Jones appreciate the result of President Howland's last call by a general and unanimous remittance from all the members.

AT the pigeon shooting match held in Syracuse, N. Y., August 23d, Bogardus, the champion of the shot-gun, was beaten twice. Mr. Mayhew of Utica took fourth prize in both matches.

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VOLUME II,

AUGUST, 1876.

NUMBER 6.

BIRD ARCHITECTURE.

NOW beautiful are many of the ingenious constructions birds use for their homes! We can find no more ingenuity in some of the most complicated works of man, in comparison to the means of both, than in the nest of the Baltimore Oriole, the Humming Birds, the Marsh Wren and some of the Warblers and Flycatchers. We are often struck with their durability, and the adaptation to the circumstances of climate and position, and admire the builder for its skill alone, if for nothing more. Yet it is not the beauty only of this architecture we admire; it is often the peculiarity of structure. Among those that are really interesting is the nest of the Flamingo, a tall structure, made mostly of mud balls and grass, forming a tower-like mound, upon the top of which the bird lays her eggs, incubating them in a standing position. There are also the nests of the Oven Bird, the Magpie, the Cliff Swallow, the Blue-gray Gnatcatcher and the Albatross, which show more or less ingenuity and present many peculiarities. Three of the most beautiful nests I ever had the pleasure of seeing were of the Pewee, the Blue-gray Gnatcatcher and Baltimore Oriole. They were selected from as many

as half a dozen specimens of each, and for shape and build they excell any others of the same species I ever met with. The first is large, measuring $6\frac{1}{2}$ inches long, 5 inches wide (at the base), $4\frac{1}{2}$ in depth, including bottom; the cavity measures $2\frac{1}{2}$ inches in diameter and $1\frac{1}{2}$ in depth. The beauty lies in its composition, which is formed of at least a dozen substances. The first or foundation, is little balls of earth cemented to the papering of an old out-house, mixed with some straws. However there was less earth in this nest than in any I ever saw. The superstructure was mainly moss, of the beautiful livid green usually found on rocks; intersecting and interlacing this in all directions, and probably intended to strengthen and hold together the whole mass, were several threads of grass and minute hairy fibers of some species of tall weed. On the outside protruded the ends of many stiff straws, which appeared to issue from a central point in the foundation of the nest, serving as supports to the upper part. Among the moss were bits of dry grass, milkweed lint, thistle-down, bits of colored string, pieces of paper, a few very fine shavings and broad, thin strips of grape-vine bark, and a few pieces of the cast-off pods of various small weed-like grasses. These materials studded various portions of the outside of the nest and ap-

parently went to make up the main structure. The cavity was gracefully hollowed, smooth, soft and lined with, first, stiff, wiry grasses, which formed the foundation of the lining; then a few shreds of tangled hemp and downy lint; lastly a circular disposition of the very finest pieces of grapevine bark, none of them more than the thickness of a piece of silk, nor less than eighteen inches long. The edge of the nest rounded perfectly and was formed of the very softest moss, which has retained all its freshness.

The second nest is a very pretty specimen of bird architecture. It is the deepest one I ever saw, measuring $2\frac{1}{2}$ inches in depth. The principal substance of its composition are very fine, wiry grasses. I had almost said they were too fine to be distinguished separately with the naked eye. Intermixed in this, were several half-unfolded thistle buds or blows. The structure is studded all over the outside with gray lichens, *each piece of which is set endways between the grasses*, and firmly pressed there, the adherence aided by the bird's saliva. These lichens bulge out considerably, giving the idea many writers have erroneously entertained, that they form the chief substance of the nest. From between the chinks in the lichens proceeded a few hairs, undoubtedly from horses. The lining consisted of lichens, pressed flat and firmly imbedded in the body of the nest, over which many downy white feathers were placed. The inside of the walls of the nest were studded with the white downy feathers, *the base of the quill of each firmly stuck in the nest*. The entire fabric is very elastic.

The nest of the *Icterus Baltimore* is not as fine a specimen of ingenuity as the last, its value lying in the oddity of substances employed and their disposition. It is composed entirely—with exception of the lining—of string, of all sizes, colors and lengths imaginable. The peculiarity lies in the fact of its having no vegetable substance in it except the lining. Most of the string is the common white twine; then there is rope, three-eighths inch in diameter, red

curtain cord, kite twine, chalk line, stationers' red twine, checkered string, carpet thread, linen fish-line and thread, silk thread and bits of every kind or quality of string known to civilization nearly, of various lengths from an inch to I should judge forty feet, for a piece of the kite-line bound the nest in every direction, lashed it to the tree in three places and wound about the boughs for a distance of two or three feet from the nest. This piece of twine is the longest I ever saw in an Oriole's nest. The structure is homely in form and lined with vine bark and the silky down of milk-weed. All in all, it is safe to say that not seldom do our commonest birds construct the most beautiful nests, and employ the oddest substances, compared with the elaborate bird-architectural triumphs of some of our most gorgeous builders.

AVIS.

Birds' Eggs and Nests.

SPECIES mentioned in this issue:—

Hairy Woodpecker, Downy Woodp'r, Towhee, Brown Towhee, Magpie.

74. HAIRY WOODPECKER.

This bird breeds in the hollows of old decayed trees, either scooped out by itself or naturally a fissure. The nest is formed of the shavings and particles of rotten wood which the bird pecks in digging the hole. This is from eight to twelve inches deep and usually about five inches in diameter at the widest part. The tree selected is generally a lofty one situated in the heart of a deep forest, from the top of which the bird may be heard a considerable distance, working at the hollow of its nest.

The eggs are four or five, pure white, with a heavy thick shell bearing a beautiful porcelain smoothness. A specimen taken in Massachusetts measures .95 by .68 inch. The eggs are ovoid in shape, and before being blown, have a very slight pinkish tinge.

76. DOWNY WOODPECKER.

Our lively little Downy Woodpecker is well known throughout the country. It is not choice of its breeding grounds; it may be found in high dense forests, or in "the knot-hole in the old pear tree;" in the tall "stub" in the pasture, or in the dead apple-tree in the orchard. It is familiar with the farmer and is seldom disturbed. The lining to the nest is often the sawdust of the tree; sometimes it is fine straws, and very frequently feathers alone. The hollow is of various depths, according to circumstances. The eggs are from four to even seven and eight, pure white, glossy as usual with this family, and measure from .70 by .65 (very spherical), to .76 by .62 inch. They breed as early as the middle of March in some localities, but about the 20th of April is the usual time.

391. TOWHEE.

The Ground Robin is found throughout the eastern portions of the United States. It makes a nest of coarse dry grass-stalks and weedy stems, woven together loosely, and placed on the ground under a clump of ferns; sometimes hidden by a bush or decayed stump. Eggs four and covered with either very fine reddish, or grayish spots, concealing the surface color of the entire egg, though more of a congruity of them is usually observable about the large end. Often they are quite obtuse at both ends. Measurement, average, .95 by .70 inch. A specimen in a friend's collection measures 1.00 by .80 of an inch, but this is larger than usual. Our Ground Robin frequents scrubby pastures and wooded lands, breeding in the latter.

396. BROWN TOWHEE.

This bird is found in the extreme western states: California, Oregon etc. As far as I can ascertain, it breeds in a manner similar to the above, the nest being constructed of very fine rootlets and leaves. The eggs are four, pale bluish gray-white, or rather white, with a bluish shade, marked with a few scattered reddish-brown and black spots of almost indistinguishable size

from their smallness, often resembling figures of animate objects. Frequently there will be no markings whatever, except a few very pale dots, of a shade but little deeper than the primary color. Shape,—generally obtuse, sometimes nearly spherical. Two specimens measure .85 by .68 and .90 by .65 inch, showing two different shapes. Collectors in California state that this bird is quite abundant there, and their eggs do not appear to be desiderata among eastern naturalists.

432. MAGPIE.

This bird inhabits the western portions of the United States, especially in the region extending from the Missouri to the Rio Grande. It breeds quite abundantly.

The nest is a singular affair, made mostly of sticks and placed in a small tree or bush a few feet from the ground. A globular shaped nest with the twigs twined together, is made, usually cemented with a little earth, and lined with rootlets and fine vine-bark, with the aperture on the side. Mr. Aiken says the structure is from one to three feet in diameter. The eggs range from five to eight. They are pale grayish-white, covered completely with very fine spots and dashes of grayish-brown, reddish-brown and raw umber, often with a scattering of minute black spots. A specimen from Utah Terr. is regularly oval, perhaps a little pointed at the small extremity, and gives the following measurements: 1.30 by .94.

The Yellow-billed Magpie is considered by Dr. Coues, as only a form of this bird, and not a distinct variety nor species.

TO BE CONTINUED. "OVUM."

Travelers and sailors who have visited the islands of the south seas never fail to observe the nesting places of the Wandering Albatross. Acres of the low ground of these islands will be studded with the elevations these birds build for nests, the owners themselves presenting a beautiful spectacle while sitting.



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AUGUST, 1876.

THE FLIGHT OF BIRDS.

WHAT a wonderful endowment is the power of flight! And how gracefully and advantageously do birds employ it as their means of locomotion! Naturalists rarely fail to direct their attention to the flight of birds, as it is a point of great interest, and one which has given rise to various theories as to the reason why, by

forcing the wings through space, birds are enabled to propell themselves. At first, one would be led to remark that the same direction of force exerted by the arms of a swimmer, is applicable generally speaking, to the wings of a bird. This is true as far as the doctrine of motion is concerned, relative to the locomotion in general of these bodies, but the elements in which they are employed, being entirely different in nature and consistency, require a correspondent change in the point of tendency of action, and this change is rendered more distinct by a consideration of the structure of the bodies which generate the motion, i. e., the wings of the bird and the arms of the swimmer. In the first place, the former have to sustain the greater weight of the object, in proportion to the character of the element than the latter, thus demanding a *downward* exertion as well as backward, to both support and propell the bird. An explanation of the *modus operandi* is given in *Scribner's Monthly*, which is as applicable as any probably given. It is written by the Duke of Argyle. He says that the open wing forms a hollow on its under side; when the wing is forced down, the pressure of the air is caught under this concavity, lifting the bird up, in the same manner as one would hoist himself up between the parallel bars of a gymnasium. This is the explanation of the manner in which the bird supports itself, but this motion alone would not tend to produce any progress forward, were it not for the structure of the wing. The front edge, being formed of the unyielding muscles and bones of the fore-arm, resists, while the after portion, of the flexible and soft ends of the feathers, readily yields to, the air. Now, when the wing is forced down, the air under it, finding the feathers yielding the easier, rushes out there, and in so doing, bends up the flexible ends of the quills, pushing them forward out of the way, which, of course, has a tendency to propell the bird forward. This process rapidly repeated, results in the phenomenon of flight.

Like most other hypotheses of cause and

effect, this is not coincided with by all theorists. We give another explication of the phenomenon of flight: The wings when operated in flying, have a motion *backward*, and the position of the surface when so employed, is inferior to the horizontal, the arm being the lowest point. The force necessary to accomplish buoyancy and progress, thus bends up the quills, so when the wing is forced downward and backward, the under surface of the feathers is brought *directly against the air*. On its return, the wing is contracted and assumes a position at a sharp angle with that used in the backward motion, striking the air edgewise. Though taken from a standpoint somewhat different from the argument of the Duke of Argyle, the theory comprehends very much the same principles. Of course the natural lightness of the bird is not ignored, when we speak of its buoyancy, but almost every body is heavy in space.

Regarding the wings of a bird as to the method of flight, i. e., the manner of giving the stroke, we have a topic of but very little less interest than the above. If one would observe the way in which the stroke is made by several birds, and compare this with the shape and size of the wing, he will find that the force of the stroke more or less, is essentially the same in birds whose wings are alike. Take for instance the long, slim wings of the Sparrow Hawk, Night Hawk, Killdeer Plover, the Gulls and some others. It will be seen that the stroke is sharp, quick, jerky and repeated very regularly. Again, observe the similarity of stroke of the wings of the Robin, Blackbird, Thrush, etc. Their wings are formed the same; the flight is even, somewhat irregular and steady. The same principle exists throughout the class of birds, perhaps somewhat less applicable in cases of unusual or rare formation of wings. Birds with broad, stiff-feathered pinions are enabled to sail for hours at a time; narrow-winged birds are deprived of this gift, and though they occasionally spread their wings and retain them so without a motion, it is only for a brief interval previous

to alighting.

There is a wide dissimilarity existing in the arms of birds as to their size and strength considering the bulk of the bird. It is well known that birds of large pinions and consequent ability to maintain a continued flight for a long period, especially in the case of Eagles, Hawks and other large birds, possess unusually large arm-bones and muscles. We may quote, as an illustration of the comparative size and strength of these organs, those of the Carrier Pigeon and Ruffed Grouse, the former possessing nearly double the wing-strength of the latter, though not so large a bird. Could a Song Sparrow assume a size corresponding to the strength of its wings, were they endowed with the power of those of the Chimney Swift, in comparison to the size of this bird, it would equal that of a Pigeon. Inversely, the degree of strength in an Eagle's wing, compared with that of a Ruffed Grouse, considering the bulk of each, would metaphorically, indicate a bird of about a Pigeon's size. Thus we can point out numberless interesting peculiarities concerning the flight of birds, and are often impressed with their manifest marvellousness.

American Birds.

The Barred Owl.

(*Syrnium nebulosum*.)

CHAS. E. COLES.

THIS species is abundant throughout the United States. They are nocturnal in their habits, coming forth only in the night in quest of their prey. They pair early in March and begin to build about the middle of April, sometimes earlier. The nest of the Barred Owl is usually built in a fork at the top of a large oak, elm or beech, among the thick foliage. It is a loosely constructed affair, being composed of small sticks, twigs, sods etc., lin-

ed with leaves and sometimes a few feathers. About the first of May, the female commences to lay her eggs. These are invariably three in number, of a pure white color, with a rough shell and about the size of a hen's egg, but more globular. I have seen hens' eggs that when placed side by side with those of the Barred Owl, are difficult of distinction. One specimen in my collection measures two inches in length by one and three-fourths in width. The young are at first covered with cream-colored down which as may be imagined, gives them a very grotesque appearance. During the day-time the Barred Owl frequently flies about, but he is no sooner seen by a diurnal bird than numbers of the smaller species set up a chattering and fly about in an agitated manner, now and then venturing a blow, and withal annoying him to such an extent that he is compelled to move. But at night he is king of the forest and terrifies his assailants with his greedy prowls.

This Owl has the body short and thick; the head large; the bill small; the foot strong and the toes rather long. Its food is mice, small birds and insects, the former of which it destroys in large numbers. This species flies so noiselessly that one may pass directly over you without your being aware of the fact, unless you observe his shadow. Jasper says: "The flight of this Owl is light, smooth and perfectly noiseless, so much so that not the slightest rustling of the wings can be heard, even if it flies only a couple of yards above your head. If the occasion requires it, their flight can be greatly protracted, as they have been noticed to fly on one stretch a distance over two miles." This species inhabits mostly deep forests, and swamps thickly covered with timber, where it builds in the most inaccessible places. The collector generally has a hard nut to crack when he attempts to collect a set of these eggs, as he has no sooner ascended the tree than he is fiercely assailed by the Owl, and is made the victim of repeated swoops, often bewildering him so that he is compelled to descend. A friend of mine recently kept a pair of these

Owls in confinement more than a year.

When wounded or cornered this bird is very dangerous, as it strikes fiercely with its talons. So powerful are these instruments that one stroke will prostrate a dog. At these times its eyes appear to be dilated to twice their usual size. The Barred Owl is one of the many of the farmer's enemies. Silently approaching the farm-house, in the night he enters the hen-house, selects a young chicken in preference to an old one, and carries it off to the woods to be devoured. The Owl appears to fly more gracefully and with an easier motion than most birds of prey.

Along the rocky shores and in the deep forests of Michigan these birds may be heard, their dismal hootings echoing in the gloom for miles. Often the sportsman will be suddenly aroused from a sound sleep by a foreboding and dismal hooting directly above his head, and seeming to say in sepulchral tones, "Tu-whoo, tu-whoo. King of the woods am I—tu-whoo, tu-whoo!"

The Swallow-tailed Hawk.

(*Nauclerus furcatus*, Vig.)

BY AVIS.

AUDUBON, in his writings says of the distribution of this bird: "A solitary individual of this species has once or twice been seen in Pennsylvania. Farther to the eastward the Swallow-tailed Hawk has néver, I believe been observed. Travelling southward along the Atlantic coast, we find it in Virginia, although in very small numbers. Beyond that state it becomes more abundant. Near the falls of the Ohio a pair had a nest and reared four young ones in 1820. In the lower parts of Kentucky it begins to become more numerous; but in the states farther to the south, and particularly in parts near the sea, it is abundant. In the large prairies of the Attacapas and Oppellousas it is extremely common." They are more common throughout the South Atlantic and Gulf States than

elsewhere, and a very few specimens have been taken in Europe. Mr Yarrel cedes it a place among the British birds on the authority of two specimens, one of which was killed, the other captured alive. M. Vieillot says it is seen as far south as Peru and Buenos Ayres. It is a very handsome bird; its maneuvers in the air exhibits all the ease and gracefulness of the Swallow, and the sheen of its plumage throws a sort of lustre upon its prepossessing appearance as it moves in wonderful gyrations to a great altitude. It feeds while on the wing, seizing grasshoppers, beetles, frogs, lizards and often snakes and quickly mounting in the air. Audubon says with regard to its habits concerning shyness, that "they are easily approached when they have alighted (referring to the migrations), being then apparently fatigued, and busily engaged in preparing themselves for continuing their journey, by dressing and oiling their feathers. At all other times, however, it is extremely difficult to get near them, as they are generally on wing through the day, and at night rest on the higher pines and cypresses bordering the river bluffs, the lakes, or the swamps of that district of country. When searching for grasshoppers and caterpillars it is not difficult to approach them under cover of a fence or tree."

The nest is constructed of the usual constituents of Hawk architecture, sticks, interspersed and lined with spanish moss, a few leaves, a little birch or other bark, a small quantity of grass and a few feathers. It is situated in the most inaccessible trees, usually oak or pine. The eggs, according to Audubon and Wilson, are from four to six, greenish-white, with a few irregular blotches and spots of umber at the large end. Both male and female assist in incubation, and but one brood is reared in a season. The young attain their full plumage upon leaving the nest, though it exhibits none of the purplish and green reflections of the old ones.

The Swallow-tailed Hawk is a fearless bird and shows a courageous disposition, fighting with talons and beak when wound-

ed, either of which applied to advantage are capable of making a painful wound. It has an artful way similar to other Hawks, of striking with the beak when one's attention is drawn away. This is the only species of the genus *Nauclerus* inhabiting N. A. and is characterized by its long and decidedly forked tail and long wings. The color of the upper plumage generally is black, possessing metallic interchangeable blue, purple and green reflections; the head, neck, base of secondary feathers and under parts, white. Length, two feet; extent, fifty-two inches.

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NUMBER 7.

Birds' Eggs and Nests.

SPECIES mentioned in this issue;—

Black-necked Stilt, Great Horned Owl,
Golden Plover, American Avocet, Red
Phalarope.

518. BLACK-NECKED STILT.



DRAWN FROM NATURE.

This bird is closely allied to the Avocet, and its distribution and characteristics are nearly identical. It is very abundant in the west, and is found especially on the alkaline lakes of that region. It is also found on the Atlantic coast. Its breeding habits conform with those of the *Recurvirostra americana* (517). The nest resembles those of the majority of waders, being flat and composed of grasses, sometimes lined with any available softer material, and plac-

ed in a shallow depression in the ground. Wilson states that the nests are added to and strengthened *after* the eggs are laid and incubation has commenced, but with exception that this may be true under special circumstances, it is generally discredited.

The eggs are four, and, like those of most of the *Limicolæ*, are blunt at one end and tapering at the other, a shape known as pyriform. The ground color is buffy-drab. Over this are distributed pretty evenly, medium sized spots—some perhaps large enough to be called blotches—of chocolate brown. There are a very few neutral tint markings. The usual sizes are from 1.75 to 1.80, by 1.15 to 1.25 inches. The accompanying engraving is taken from a specimen in my collection.

48. GREAT HORNED OWL.

This bird, like all the members of its family, lays white eggs. The nest is placed either in the hollow of a decayed stump or upon the upper limbs of an evergreen tree, usually in swampy localities and always in very dark woods. It is a rough structure, made primarily of sticks, and lined with a few coarse straws. Often in the case of a nest in a hollow, there is scarcely anything to merit the name of nest. The eggs are usually four, sometimes five, but seldom six. They are white, very thick shelled, quite spherical and measure on the

average 2 inches in length by 2.20 to 2.40 in width. The parent birds protect their eggs and young with undaunted prowess, snapping the bill and hissing at the intruder in anything but a pleasant manner.

503. GOLDEN PLOVER.

The American form of this bird breeds far northward: on the shores of Hudson Bay and the Arctic Ocean. The nest, according to Mr. Dall, is constructed of dry, wiry grasses, sometimes lined with a few feathers, and placed upon a tussock of grass. He also states the eggs to be two in number. Dr. Coues believes four to be the regular set, as that is the usual deposit of this family. They are pyriform in shape and measure, on the average, 1.90 by 1.35 inches. In their general appearance they correspond with the eggs of other Plover, the primary color being a pale, raw sienna, with a tinge of drab, over which are distributed quite thickly, well-defined patches, intermingled blotches, and spots, mainly of very dark brown, approaching black. Among these spots are small dots of various shades from a very faint shell tint to burnt umber. The egg is usually very beautiful in the pattern of its coloration, the decision of outline of the markings being more than usually apparent.

517. AMERICAN AVOCET.

We find the Avocet to inhabit the entire United States, though in New York it is very seldom seen. In the Eastern States it is very rare, and if found in any numbers south, it is on the Atlantic coast. It breeds probably most abundantly in the interior, on the lakes and streams of the Mississippi Valley.

The nest of this bird is simply a depression in the ground, with or without living, as circumstances and situation require. Some authors state that it frequently lays its eggs in a very exposed position, on the dry earth, without shrub or tussock to shelter it. In some situations a lining of dry weeds and grasses is built in the hollow. The eggs are usually four, of the prevailing pyriform shape, and in size, shape and col-

oration, are much like those of the Stilt. The shell color is either light buff or brownish-drab; this is marked quite irregularly with very dark umber spots and blotches, sometimes so thick about the greatest width of the egg as to be confluent, at others quite thinly scattered. The shell has in some specimens, a very glossy appearance, similar to that of the Willow Ptarmigan, in which case the markings are unusually distinct and finely traced. Sizes range from 1.90 to 2.14 inches in length, and from 1.30 to 1.45 inches in width. A single specimen measures 2.00 by 1.40 inches, the average proportions.

521. RED PHALAROPE.

This is more particularly a maritime than an inland bird, its especial locality appearing to be the more northern coasts of North America. Messrs. Wheaton and Ridgway assign it respectively to Ohio and Illinois. It doubtless occurs in the interior elsewhere, as testified by observers. Its breeding grounds are far to the north, on the rivers and inlets of the Arctic coast; they have also been found to breed very numerous on the tributaries of Hudson Bay. The nest is a simple affair, consisting of a few items of dried vegetation, leaves, straws, etc. The eggs are four, notwithstanding that one or two authorities give two as the set. Measurements: from 1.18 by .85, to 1.35 by .95 inches. This includes all probable dimensions, though, as a general thing, they are very uniform in size. The primary color is light olive chocolate brown; over this, sometimes regularly, at others in scattered groups, is a collection of chocolate and umber spots. Dr. Coues says the eggs are almost indistinguishable from those of *Phalaropus hyperboreus* (520). "OVUM."

TO BE CONTINUED.

THE Common Crow has been found to nest in bushes. Two nests were discovered on April 20th, near Pokassett, Me., one eight, the other four feet above the ground, in, our correspondent says, wild cherry bushes. Nests were smaller than usual.

How a Bird Gets Out of Its Shell.

WE notice that the leading poultry journals have, of late, made a specialty of the question concerning the way in which a chick makes its exit from the shell. Writers are at variance and rigorously uphold their opinions as being right. As it is an interesting question, and applicable to all birds, we will make a few extracts from two or three authors.

Mr. R. J. Dodge from observations on artificial incubation, states that "on the extremity of the chicken's upper bill, a small horny point is formed, with which the chick *literally bores through the shell*."

"*This horny point soon drops off the bill, which shows that it was made for that express purpose, and for no other, notwithstanding Darwin's development theory. Mr. Wolff said there is no such thing as picking a hole through the shell, as every atom of space is filled, or crammed so full that it is impossible for a chick to strike a blow with his bill. After a hole has been bored through the shell, so that the chick can inhale air, its body expands and bursts the shell asunder. The bill of a chick will always be found near the middle of the shell. Hence, as a hole at that point weakens the shell, the fracture will be made, each way, from the hole.*"

This is much doubted by Mr. Marot of Springfield, who, if not right in his assertions, has set forth a very plain statement of the facts that have come under his observation. He writes as follows in regard to the above:

"Now, I very much doubt if either of these gentlemen have handled a pipped egg, or examined into the matter closely. * * *

"They certainly never found a hole bored through an egg. A chicken, for to drill, would need a good tool, with good hard angles, which cannot be found in a chick's bill.

"Then, too, the act of drilling would necessitate the turning of the chick's head, and the body would have to turn too, or the neck would suffer the same as it does when the

cook holds the head still and moves the body around. This could not take place, for the body at the rear is connected by small cords to the membrane of the shell, and these are not severed until the chick breaks them by forcing itself from the shell.

"The head of the chick is formed between the body and left wing, and the point of the bill one-eighth of an inch from the shell; it is nearest to the large end of the shell, and to break the shell, needs only to be driven forward,—the hard point spoken of by Mr. Dodge acting as the poll of a hammer, and fracturing the shell; then the expansion of the chick readily disrupts it, if the lining membrane be not too dry or tough to tear.

"* * * Notwithstanding the assertion of Mr. Wolff, that every atom of space is filled or crammed, the inquisitive will find, on examination, that, at the time of the pipping of the shell, the air chamber is nearly three times as large as it is in the fresh egg; and if the egg were broken two or three days before time of hatching, he would find that the chick did not nearly fill the shell.

"I have helped dozens of chicks from the egg, and I never found a bored shell; all were fractured from a blow on the inside, and some I found, where the shell was broken, but where the lining membrane remained intact. One I found, in which a piece of the shell, nearly three-sixteenths of an inch square, had been entirely carried away, but mostly the shell was simply fractured, and the membrane torn. * * *

"The head of the chick is, as I said, under the left wing; the neck is twisted enough to admit of its laying so the beak points forward. The left foot comes up to, and the toes touch this wing; the right wing and leg are as in life, and it is the growth of the chick and use of its legs that finally sunder the shell.

"From the position of the head, the only motion it is capable of is a forward one; and as the breast of the chick is comparatively flat, it has room enough to strike the blow necessary to fracture its prison."

TO BE CONTINUED.



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SEPTEMBER, 1876.

THE OBJECT OF COLLECTING.

EVERY collector, doubtless, has some special object for collecting specimens of natural history. It is a work for which some specific end is in view, but whether for science, ornament, or other purposes, is the collector's own idea. It too frequently occurs in the case of birds or eggs being the subject, that collecting is carried on simply

for the sport it yields, and this is what every collector should improve upon. A collector and a naturalist are not always identical, the signification of each term, if used alone, being wide in difference. In common, a collector is understood to be a naturalist as well as a gatherer, and one deeply interested in the prosecution of his researches.

Ornithology and oölogy are probably as interesting and well considered studies as any other branch of natural science, and the true collector endeavors to obtain as much knowledge from his collections and the circumstances surrounding them, as he can, thus constantly enlarging upon his own information as well as that of the world. The ardent collector and naturalist, looks upon his fellow collectors who gather specimens for the one object of *having* a collection, or excitement of finding a bird's nest or shooting a bird, only to let them go to destruction, as not worthy of being allowed to possess a collection. Many collectors seem to be impressed with a wrong idea of what specimens are obtained for, and enter into the field because some of their friends, perhaps, have a collection of eggs or skins, and they think that the same subject might, too, have some excitement for them. The prevailing result is, that after a few specimens have been procured and got together, the enterprise is dropped, and all interest has fled. These are neither true naturalists nor collectors.

A well arranged, labelled and reliable collection of eggs, is something of great interest and value, and more regard is felt in a few specimens procured entirely by the student and owner, than in a whole case of eggs collected by unknown or remote persons. This is the case when one is naturally attracted to the science, and regards it, in the terms of some persons, as his "hobby." Here, thus, exists an object—a concern for one's own enlightenment on the subject, and in each specimen collected, the finder has not only added so much more to his cabinet, but to his knowledge. As a science, oölogy requires to be studied the same as other natural knowledge, and the

elements are perhaps, equally difficult for some to understand. Most oölogists of the present time, repudiate the idea of having cracked or fragmentary specimens, but if they are collecting simply for ornament and the acquirement of specimens, this, perhaps, is excusable. But our great naturalists are also collecting for the acquirement of specimens, but not that alone; they are often delighted to possess even half a shell, if it will add to previous information or develop anything new, and such fragments are cherished with more than the usual care. These broken specimens often contribute more upon the subject they represent, than scores of more ordinary ones. The Smithsonian Institution, Philadelphia Academy of Sciences, Paris Museum, and other famous scientific institutions, possess many rare fragmentary eggs, and it is through these that much intelligence has been imparted.

Now, if an amateur obtains a rare specimen, and it is not perfect in each and every respect, it is cast aside as worthless, all its history, which might, upon investigation, prove of benefit, is lost. We can cite numbers of collectors, who, though much interested in their work, if a broken egg of the *Vireo Belli* taken in Massachusetts, or *Zontrichia albicollis* from Florida, were presented them, would not accept them; and yet, were those eggs taken in the localities mentioned, they would equal in value a score of like sound specimens, found in their native localities, to the true naturalist.

Do not think thus of eggs in poor condition. Preserve them, and above all, in collecting any specimens, obtain all the data

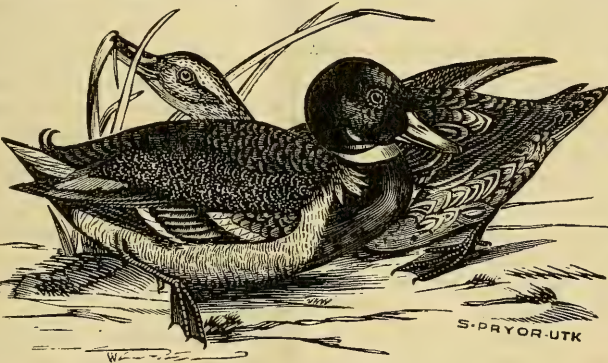
you can find, so that in case you should wish to decide some disputed point, you can refer to your notes. If you think such specimens objectionable, and they are of any rarity, forward them to some person or institution interested, and in nine cases out of ten, they will be gratified to receive them.

Foreign Birds.

The Gray Call Duck.

THE Gray Call Duck, illustrated on this page, is a very diminutive bird, inhabiting the Oriental countries. It possesses all the elegance of the Wood Duck, being very much like it in habits. It is commonly employed by sportsmen as decoy

for other wild species, on account of its loud, shrill quacking. The name of Call Duck is thus established because of the continuance and high tone of its voice, which may be heard a great dis-



THE GRAY CALL DUCK.

tance upon the water. In outline and markings, the description of the Mallard applies very well to the present species, there being little difference between them except in size, the latter being but little over half as large as the former.

They are easily bred and domesticated, and, like other varieties, soon become tame. They are bred usually for show purposes, in which they take the position among Ducks that the Bantam fowl does among chickens. On the water they are extremely active, and make a beautiful appearance. There is another species of this Duck called

the White Call Duck, which has a pure white plumage. The favorite resort of this bird are the reeds and long grass bordering marshes and ponds. They often remain among these for days at a time, feeding upon the vegetable substances which abound in such places.

American Birds.

The Blue-headed Grackle.

(*Scolecophagus cyanocephalus*.)

THIS beautiful Blackbird is found throughout western United States generally, from Minnesota to Mexico. It is a migratory bird, and is usually seen in flocks, but does not breed as commonly in companies or communities as some of the other Blackbirds. It prefers stubble tracts, overgrown with dead trees and bushes, and it is noticeable that when feeding, its choice does not lie in the direction of swampy districts, and it is mentioned by Dr. Coues that it does not resort necessarily to swampy places to breed. When the breeding season is over they fly in large flocks, and when thus congregated, resemble the *Quiscalis* in habits and mode of flight, traveling sometimes high in the air, at others at tree-top height, and often alighting abruptly upon the ground, or in the trees and bushes when in search of food. They are very graceful in all their motions, and when traversing the ground after insects and grains, their full, shining plumage and elegant form is exhibited to good advantage. In all their movements, they may be compared to the Purple Grackle; their flight, mode of feeding, and general conduct, both when flocked and single, exhibit peculiarities very much like, if not exactly similar to those of that bird.

In the fall, when the migrations are at their height, and when a plentiful supply of food can be obtained, the Blue-headed Grackle is considered good eating, the flavor and quality of its flesh being quite above

that of most smaller birds, not game. But unless procured at the right time, they are like the Sandpiper, "quite scarce in flesh," and require, for an ordinary meal, more birds than a person usually cares to pluck at once. They are rather shy of human beings, but if the sportsman exercise ordinary care, he will not unfrequently be able to bag a dozen or so at a shot upon the wing, as the birds generally fly close together when in flocks.

The nest of this bird—called also Brewer's Blackbird—is quite bulky, being constructed of a miscellaneous collection of mud, twigs, straws, grass, rootlets and hair, the first serving as a sort of solidifier, and the two last substances forming the lining. It is placed in a sapling, tree or bush, oftenest in a tree, from a foot or so to twenty feet above the ground. The favorite locality for the breeding ground is swampy, reedy tracts, but it does not, as previously mentioned, make a specialty of those situations. Eggs four or five, either longly ovoid or obtusely elliptical. Three specimens, taken at random from as many different sets, give the following measurements: .95 by .75, 1.06 by .73 and 1.08 by .78. The first and last, as far as can be seen, have a dull, grayish-white ground; over this, in one specimen blotches, in the other fine spots, of chocolate brown, are distributed indifferently. The first is a most peculiar specimen; a large blotch of rich brown, bordered by a shade darker, entirely covers the small end; from thence to the large end, there are no markings on one side, but on the other is a continuous line of darkly outlined spots of innumerable shapes. The last is covered entirely, and as regularly as the dots on a Cow-bird's egg, with dull, grayish-chocolate markings, rather inclined to longitudinal distribution. The second example is paler and more finely marked than the last mentioned. Sometimes the same tree contains half a dozen nests, but this is an exception, one or two, and at times three, being the rule.

The male bird is entirely black, deepest on the back, approaching brown upon the

primaries, and with clear, metallic purple, steel-blue and green reflections on the head and neck, thus affording a comparison to the Purple Grackle. The female is dusky, and considerably less conspicuous. In the autumn, both male and female attain the light edgings upon the body feathers that the young have, but they are not as prominent upon the male of this species, as upon some of the other Blackbirds. AVIS.

The Foolish Guillemot.

(*Uria lomvia*.)

THE Foolish Guillemot, so named it is said, from suffering itself to be captured rather than abandon its egg or young, is a native of the more northern coasts of both worlds. It is entirely a maritime bird, and is exceedingly common along the coasts of Labrador, Hudson Bay and Newfoundland. The ledges and projections of the cliffs that so numerous border the sea in Newfoundland and Labrador are always crowded more or less, with these birds, together with myriads of Puffins, Auks and other sea birds, all of which, perched in rows upon the rocks, present a singular and at once very interesting appearance. A curious picture, especially, is presented by the lines of females, huddled closely together, each covering its own single egg. The immense congregation of birds, and the regularity with which they station themselves, reminds one of a very large class of small school-children ranged in rows for reciting or calisthenics. The single egg deposited upon the bare earth is pale green, longly pear-shaped and covered with umber and black markings, either in spots or large straggling blotches. An egg collected in Labrador in 1873, measures 3.70 by 2 inches, but there is no rule for the size. One bird may lay an egg as large as that mentioned, and its neighbor one no more than three-fourths or four-fifths of that size. The specimen from which the above dimensions were taken is light emerald green, with not more than half a dozen blotches, and about

the same number of streaks of umber and black upon its surface. Its diameter, half an inch from the small end, is .87½ inch, thus making the longitudinal approach to the thickest part, at an angle of about fifteen degrees from the central line. It requires thirty days for incubation, and the young remain in and about the nest for five or six weeks, until they acquire their perfect plumage, and can forge about after their own food, which consists of small fish of various kinds, water crustaceans and mollusks, found plentifully upon the coasts. The young are covered with a dense down, of blackish-gray above and white beneath, and it is amusing what a curious spectacle a community of such looking objects presents.

During August and September, perhaps later, the Guillemots undergo a moult; they then take to the ocean, and the change occurs while they pass the time upon the water. They lose so many quill feathers during the period of the moult, that for a time they seem incapable of flight, and employ diving exclusively, as their means of eluding danger. They are expert, however, and are as safe in that condition as when in possession of their power of flight. In flying, the Guillemot employs the wings with sharp and rapid strokes, seeming to cause the bird much effort, and the period is of short duration. It seldom flies above a few rods from the water or rocks. The favorite post of this bird is the edge of a projecting shelf of rock over the water, from which it can easily discern its food below, and in case of danger, throw itself off to facilitate the immediate use of its wings.

In this genus (*Uria*), the body is thick and robust; tail very short; wings small; bill straight, acute and of moderate length; legs short and placed behind the equilibrium, the tarsi only being seen when the bird sits erect. The whole of the tarsi and feet are employed to support the bird. Male bird is fifteen or sixteen inches in length.

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GENERAL TOPICS.

—A LARGE number of White Owls have been taken in the central districts of this state within the past few weeks. One of the finest specimens was killed by a woman while in the act of carrying off a chicken.

—A KINGFISHER was discovered not long since, by a party of boys, who were walking beside the river at Bloomfield, Conn., struggling in the stream. On wading out, it was ascertained that the bird had dived upon a fresh-water clam, which had closed its shell upon the bird, holding it so firmly that the shell had to be broken before the bird could be released.

—A VERY large specimen of the Adjutant Stork (*Leptoptilos argala*) was kept alive in a private aviary in France for some time, by a M. DeChaineu, and which had attracted considerable attention by its utter greediness. The owner possessed a very fine large cat, and neglecting to feed the bird, it swallowed the Monsieur's pet. The act so grieved DeChaineu, that instead of ceding it to the Lyons Zoological Garden, as he had intended, he killed it. He had been previously offered nearly 600 francs, or over \$100 for it, by a grain merchant, for the purpose of destroying the rats in his store-house. It stood five feet in height, and measured twelve feet in the extent of its wings.

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ISSUED IN BEHALF OF THE SCIENCE WHICH IT ADVOCATES.

VOLUME II,

OCTOBER, 1876.

NUMBER 8.

Nesting of the Hooded Oriole in Cooke County, Texas.

DURING the season of '76, I secured four nests and complete sets of the Hooded Oriole, each nest containing five eggs. The eggs of set number one average .79 by .58½ inch, and the nest was placed at the extremity of a branch in a large red oak, fifteen feet high. The nest was placed above the crotch of several twigs, so that its sides impinged upon the twigs, and to those twigs it was fastened by a long, tough grass which grows in flat or wet prairies, and is called here "wire grass." The nest is composed almost wholly of this long grass, and as it is placed in a clump of leaves, and remains green for several days, the nest is hard to discover. The outside diameter is 4 inches, inside (at top) 2 inches; depth, outside 4 inches, inside 2½ inches. The eggs are of a pale bluish ground, with a wreath of dark brown blotches about the large end, somewhat resembling the eggs of the Crow Blackbird (*Q. versicolor*). This nest is lined with feathers.

The second nest was suspended from the extremity of a post oak limb, seven feet high, and measures 3½ inches outside and 2½ inside, in diameter; depth, outside 3½ inches, inside 2½. It is lined with wool and cot-

ton, not a single feather being visible. The eggs average .83 by .58 inch.

The third nest was attached to the end of a poison vine, over a stream of water, and is lined entirely with cotton. Average size of eggs, .79½ by .55½ inch.

The last nest was placed in a position similar to that of the first, in the twigs of a cherry tree, twenty feet above the ground, and measures a fraction larger. The eggs measure .78 by .55½ inch. The nest differs from the others in having *no lining* except the grass with which it is built.

I have seen no record of this Oriole nesting north of the Rio Grande, or even being seen this far north. Cooke County is located at the head of the Trinity River, five-hundred miles north of the mouth of the Rio Grande.

The first nest was taken May 24th. and the last June 3d. The habits of this bird are the same as those of the Texas variety of the Orchard Oriole.

Gainesville, Oct. 27. G. H. RAGSDALE,

THAT the translucent membrane lining the inside of an egg-shell amalgamates, in a perceptible degree, with the substance of the shell, is demonstrated by the fact that eggs are frequently found with but a half-formed shell, the remaining portion being covered with a membranous skin, and

when subjected to a test, the membrane does not disunite at the inner surface of the shell as readily as at the point of connection or apparent continuation with the shell. In 1874, two or three eggs were taken in Oneida county with but half formed shells. The most interesting was one of a sett of seven of the *Colaptes auratus*, which unhappily was destroyed by jarring. The egg was about half-covered with a very thin shell, the other half with the elastic membrane, and at the place of connection, the shell gradually thinned and became soft, as if the membrane was only the shell in the first stages of its growth, and had not been converted. After the egg was broken, an examination showed that the membrane was not only a continuation of the lining of the shell, but rigidly fastened to it at its edges.

Birds' Eggs and Nests.

SPECIES mentioned in this issue:—

Redstart, Scarlet Tanager, Warbling Vireo, Bell's Vireo, Blue-headed Vireo.

217. REDSTART.

This very lively little bird, called by some the Orange-sided Flycatcher, is common in the Eastern and Middle States. Its nest and eggs are familiar to many naturalists, but from their isolation, some have never been able to find one. In the Eastern and Middle States, they build, about the first of June, a neat little nest in a small sapling, a bush or upon the ground. It is composed of fine straws, rootlets, fibres of grape-vine bark and various light and soft substances, and is rather deeply cup-shaped. The sides of newly-wooded slopes, upland brush swamps, and spots covered very thickly with alder and berry bushes, are favorite places for breeding. Usually four eggs constitute the set, but five are sometimes taken. These are delicately white, quite thickly spotted—or rather dotted and sprinkled—all over with brownish; sometimes a well defined circle covers the bulge of the egg. Average measurements, .62 by .48 inch.

220. SCARLET TANAGER.

This elegant bird is found in most parts of the United States, and is particularly abundant from Texas to New York during the summer. It is a very nomadic bird, seldom remaining for any length of time in one place. They breed usually in sequestered woods, and construct a nest, which in appearance and make-up, much resembles that of the Rose-breasted Grosbeak, though somewhat deeper. The eggs are well known, and more easily recognizable than those of most other small birds. They are pale green, quite grayish in many specimens, and either spotted over the entire surface, or circled at the large end with a ring of confluent dots of lavender and brown. Two specimens from the south measure .83 by .63, and .90 by $68\frac{1}{2}$ of an inch. As a rule, eggs of this bird do not vary much from these figures. Breeding season commences during the latter part of May.

245. WARBLING VIREO.

To the gardener this bird is a favorite, and is protected by him with a zealousness not usually shown toward most other birds. They appear to choose the more populous districts in which to rear their young, the tall, shade maples and elms affording excellent places for their nests. The material employed in the construction of the nest is varied according to locality, etc., but they always have the same appearance, whether collected in Maine or Montana. Two nests before me, collected in two different localities, are essentially the same in construction and material. Both show a large amount of grape-vine shreds and dried grasses in their composition. One is almost entirely covered on the outside with the paper-like substance of hornets' nests and dried leaves, and is edged with the glossy exudation of the milk-weed, and a dark, elastic, cottony substance, which appears much like the interior of the common puff-ball. The second nest is composed entirely of grape-vine bark, which is agglutinated with saliva. The nest is invariably pensive and attached in the fork of a twig at the extrem-

ity of a limb. Such a similarity exists in the eggs of the entire family of *Vireonidae*, with one or two exceptions, that it is impossible in most cases to tell to what species a certain nest and egg belongs without obtaining the bird. A specimen collected in New Jersey in 1873, is quite thinly dotted on the large end with small points of black, on a white ground. It measures .80 by .60.

246. BELL'S VIREO.

This bird's breeding range is quite restricted; more so than of most other Vireos. Most of the eggs collected are taken in Texas. It is found very commonly in Missouri, Texas, Arkansas and Kansas. It breeds quite commonly in the stubble localities, placing the nest, of fibrous barks, cottony substances and strings, in either a tall bush or tree. The eggs are small, measuring about .69 inch in length, by .46 to .50 inch in width, and are white, with a rosy tint before being blown, speckled, in most instances over the entire shell, with minute dots and points of red and brown. In one specimen the entire marking does not comprise more than forty dots.

250. BLUE-HEADED VIREO,

Otherwise the Solitary Vireo, is common to the eastern portions of the United States. It nests more commonly in deep woods and in isolated localities than the other eastern species; indeed, it may be said that it is the only one that habitually chooses such places. The nest is placed at the extremity of a limb, usually of a small sapling, not over eight feet above the ground. All the nests I ever saw were formed alike and were made of the same material. With the exception of a few stems and one or two other minor substances, the composition of the nest is nearly the same as those of *V. olivaceus* and *gilvus*. An egg from Oneida county, New York, measures .80 by .58 inch; is white, covered on the large end exclusively with a scant collection of lilac-brown and black dots, and is longly ovoid.

TO BE CONTINUED. "OVUM."

How a Bird Gets Out of Its Shell.

[CONTINUED FROM PAGE 51.]

MR. H. E. Cleveland, of Staten Island, evidently does not advance much credit to the statements of Mr. Marot; his idea (or rather, we should judge by his words, conviction) does not coincide in any particular with the opinions of Mr. Marot, and that gentleman sets forth his argument as conclusive, and in opposition to theory. Now, from the words of Mr. Cleveland, who in apparent sarcasm heads his articles, "2 and 2 make 4," we take it that Mr. Marot did not inquire into the matter at all and consequently knew naught of the subject whereof he argued; more than that, he gives more credit to the theories of Mr. Dodge and Mr. Wolff than to the argument of the aforesaid gentlemen.

Without giving a detailed discussion of the numerous points of opposition made by Mr. Cleveland, we will give his argument in a very abridged form. He first contradicts Mr. Marot's statement by saying that the chick's head is never found under the left wing, but under the *right*, and that, instead of the connection of the body with the membrane of the shell by small chords, no such phenomenon occurs. A further paragraph refutes the bursting of the shell by the expansion of the chick, and evidently is intended to reflect absurdity upon the argument. These points all form the pith of the subject, and seem to have been ignored by many persons, as totally immaterial with the *modus operandi* that the chick may be released.

According to the authority in view, an extension of the chick takes place, and not expansion, and that, in denial of the inability of the embryo to move, on account of the connection with the membrane, a *rotary* motion takes place, and the chick not only chips the shell in one place, but fractures its entire circumference, whence it is released. The extension of the chick toward the extremities of the shell, removes the

CONTINUED ON PAGE 63.



Devoted to Birds and Birds' Eggs

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OCTOBER, 1876.

THE next issue of THE OöLOGIST will appear as a consolidation of the November and December numbers. This course is adopted, in order that we may be able to present our paper on time. The main cause of our delay in the last issues, was the desire to push forward the Collectors' Directory, which is now about ready for delivery. We shall present to our read-

ers, an article on the Rose-breasted Grosbeak (*Guiraca ludoviciana*), as an extract from John J. Audubon, illustrated with a beautiful engraving, in the consolidated number. All those with whom Audubon was a favorite, should not omit to read this, as it is one of the most beautiful of his descriptions; and exhibits the imaginative powers of the great naturalist as vividly as any pen-picture he ever drew.

WE have lately received so many misdirected letters, that we would advise our correspondents and readers to write our name and address as distinct as possible, and carefully note our initials. Some letters have lain in the post-office more than three months, on account of mis-direction.

S. L. WILLARD & CO.,
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American Birds.

The American Bittern.
(*Botarus minor.*)

THIS bird is not very often seen, even in places where it is plenty, as the character of its haunts is such that the collector is not apt to run across it in his collecting trips very often, and when he does, it is more by fortune than judgment. As far as my experience goes, I must say that I do not think they ever breed in colonies, as do the Herons, more than one or at most two pair being seldom seen in the same swamp.

I was out one day last season (spring of '76), and as I was walking along the edge of a slough, a Bittern rose almost from under my feet; on examining the ground, I found in a slight depression, seven eggs, very far advanced in incubation. Though I searched every foot of ground in the slough very carefully, I did not find another nest nor see another bird. I succeeded in finding but two other nests that season, and they were in different swamps, several miles

apart, and both at least six or seven miles from the first.

The nest, if it be worthy of the name, is merely a slight depression in the ground, placed close to the edge of a slough, with a few fine sticks laid down, on which the eggs rest. The eggs average about 1.90 by 1.50 inch, and are of an olive green color, without markings.

Mr. Samuels says that "it breeds in communities, placing the nests on low bushes or thick tufts of grass, sometimes in low, thickly wooded trees; the nest being composed of coarse grasses, twigs, and a few leaves," and mentions a locality in Maine where they have been for years. Audubon says exactly the contrary; "Places inhabited by them one year are deserted the next."

My experience has been, as before stated, that it is a solitary bird in its breeding habits, as well as at other times, for, though I have repeatedly flushed single birds when out shooting, I have never seen two in the slough, and never, that I can recollect, within a mile of each other.

Dr. Coues, in his "Birds of the N.W.," describes their note in the breeding season (quoting from Mr. Samuels,) as resembling the syllables *Chunk-a-lunk-chunk*, *quank*, *chunk-a-lunk-chunk*. At other times it is a single note, something like the syllable *quark*; this is its note of alarm, and is always uttered when the bird is disturbed. They are very slow on the wing, rising with an awkward, labored movement, and flapping slowly and clumsily away. I have killed them with a light charge of number eight shot. When wounded, they throw themselves upon their back, and are rather dangerous to handle, as they strike savagely with their sharp bill, which is capable of inflicting a painful wound.

It feeds mostly on small water animals, such as frogs, crawfish, lizards, fish, snakes &c. Its flesh is not esteemed by the generality of people; indeed, I never saw but one man who had eaten it; he pronounced it "first-rate." It is known as "Thunder pump" in this vicinity; other names are "Stake-driver," "Indian-hen" and "quack"

It may not be uninteresting to your readers to quote a few short passages from the pen of the late H. W. Herbert (Frank Forrester) on this bird. In regard to its flesh, he says: "Its flesh is, in reality very delicate and juicy, and is still (1852) held in high repute in Europe." He further says, that "It was the wont of prowrest chevaliers when devoting themselves to feats of emprise most perilous, to swear 'before God, the Bittern and the Ladies!'" and states that no other bird, except the Peacock and Heron, and no animal, was ever so honored. He differs from most ornithologists in saying that he has seen them together in sufficient numbers to merit the application of the word flock. Once, on the marshes of the *Riviere aux Canards*, in Canada West, he several times flushed five or six at a time, and this late in September, so that they could not have been young birds still under their parents' care. Again, he was on the marshes of the Hackensack river, on a summer evening, and saw first one rise and then another, until as many as fifteen or twenty were flying together. He gives a very interesting account of this bird, which I would quote but for fear that you will think there is already too little original matter in this article. He also says, speaking of their breeding habits, that, on the Severn river, which empties into Hudson Bay, they build on the ground, but that he had seen them building in trees near Bangor, Maine, and concludes that where suitable trees can be found, they prefer to build in them, as do their congeners, the Herons. It is not for me to decide whether they are solitary or not, or whether they build on the ground or not, but the reader must form his own opinions by carefully weighing the testimony of the authorities I have quoted, and by what he has observed himself. The habits of this bird form a very interesting study, and perhaps some of your readers can give more facts concerning it than I have done; if so let us hear from them.

Peotone, Illinois.

"EUSPIZA."

Notes on the Common Rail.

IN the border marshes of Oneida county, the little Sora is very abundant and in shooting season forms one of the best game birds we have. The sport of shooting Rail has its fascinations, and is doubtless the best practice an amateur could have, while the birds, when procured in sufficient numbers, make up a dish that for flavor and juiciness is unsurpassed by any other small bird. In the fall, when the reeds are flush and the water not too high, the Sora, in company with the Virginia and Mud Rails, frequents the marshes in large numbers, and from their habit of searching food separately, the sportsman rarely experiences difficulty in finding birds in almost any spot he chooses to commence his operations. With a good spaniel, they are easily flushed, though at times they lie very close, and not uncommonly a stone, if cast near them, will be quite effectual in obtaining one a good shot.

In marshes where the reeds are quite thin, they may often be seen running swiftly over the bent stems of the rushes, with head down, intently regarding both plant and water, and occasionally, aye, frequently, stopping to pluck an insect from a neighboring stem, or dropping into the water below for the same purpose. If an intruder be observed while on its rambles, it gives a preliminary quirt of the tail, and is gone like a flash, the last seen of it being a doubtful form winding a very crooked way through the rushes, leaving a few stems still quivering to mark its path. Very probably the same bird will, a moment after, be looking upon you from the depths of the reedy forest in a direction nearly opposite its hasty retreat. When running low down and nearly at the surface of the water, it often deceives one with the impression that it is a water rat. Its movements are perfectly noiseless, and, as the farmer said of his mule, "mighty uncertain," the sportsman often, after having fired his gun at what he supposed was a Rail, finding nothing but a bunch of shattered reeds or a shivered stick

to account for his shot. Its flight is low, being seldom at any height above the tops of the reeds, and unless badly frightened, of short duration. Ordinarily, the shot is an easy one, but the bird has a habit of suddenly wheeling and flying at right angles with its former course, or dropping into the rushes as if shot, often in the latter case, causing the sportsman after he had fired to suppose that such really was the fact.

The Common Rail builds its frail nest among the reeds, in the thickest, though not necessarily wettest portions of the marsh, and lays from five to ten eggs, of a light buff color, spotted with fine dots of black. When the nest is discovered, the female quietly slips from her eggs and glides off through the rushes, but she always sits close, and will not get up until certain that she is seen. AVIS.

WE see the announcement of the addition to our avi-fauna, of five species of birds, by Dr. J. C. Merrill, of Fort Brown, Texas. These birds formerly were supposed to inhabit this locality, but sufficient evidence of their actual occurrence there not being established, they were considered as either extra-limital or extraneous, and were not enumerated in the list of North American birds. With the addition of these, the number of birds now inhabiting North America is augmented to about 770 species, including varieties. The birds discovered are: *Molothrus aeneus*, a species of Cow-bird,—*Nyctidromus albigollis*, a species allied to, or included in the *Caprimulgidae*,—*Pyrrhophæna riefferi*, a Humming Bird,—*Paragymnostoma*, a peculiar species allied to the *Rallidae*, with long toes and wing-spurs,—*Podiceps dominicus*, a small Grebe or Diver, and more recently an additional species of Humming Bird.

THE *Naturalist and Fancier*, a monthly devoted to pet-stock and birds, is at hand.

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CONTINUED FROM PAGE 59.

pressure from the sides of the shell, under the principle that the same body always occupies the same space, whatever shape it may assume. Now, the chick being thus positioned, a movement toward the ends of the shell will release the head, which lies toward the greatest width of the egg, from the confined position, sufficient to enable it to make use of its bill, which, instead of being used instinctively for fracturing its prison, is employed vigorously as what the author calls its "birth throe," and the extremities of the body, acting as a fulcrum, in connection with the movement of the head, tends to produce a rotary motion, which, if persisted in, completes the circuit of the shell in due time. Thus Mr. Cleveland reasons. The gist of his arguments as seen, is the release of the chick by its struggles and its efforts to free itself from the onus of birth, and the support of the conviction of the rotary motion and unconnected situation of the embryo.

Though Mr. Cleveland's arguments are evidently the issues of examination, and founded for the most part on fact, we would beg leave to make a few remarks upon the subject, some of which, perhaps, do not coincide with his views. In the first place, the shell is *not always* fractured entirely round, a point clearly overlooked; neither is there any rule for the position of the entire rupture. Herein lies a point which nearly invalidates both Mr. Marot's and Mr. Cleveland's affirmations, whereas if the shell is not ruptured round the circumference, the chick does not rotate, and if the embryo does not rotate, Mr. Cleveland has lost his main point. Nothing is mentioned in Mr. Marot's assertions of the direction of the fracture, but it is to be inferred from the engraving, that it agrees with the declaration of the former gentleman. Mr. Wolff says, "The bill of a chick will always be found near the middle of the shell. Hence, as a hole at that point weakens the shell, the fracture will be made, each way, from the hole." This, as we understand it, signifies that the fracture is made at one

point, and is extended by other means than by the point of the beak, which certainly doesn't imply that the bird rotates. Why does not Mr. Cleveland contradict this? If a person interested will examine a dozen eggs, that are about to burst, he will find in nine cases out of ten, that no two fractures are extended alike; moreover, he will notice that but one point in the entire shell bears the marks of the chick's bill, and if the egg is opened after the hole is commenced, and before the bird makes its exit, a quick glance will show the bill of the chick opposite, or very nearly opposite, the hole, as often to the left as to the right of it.

In the second place, both Mr. Marot and Mr. Cleveland are wrong concerning the attachment of the body to the membrane of the shell. Such an attachment *does* occur; and this attachment is broken before the chick leaves the shell. The membrane is a tough lining to the inside of the shell, and contains blood; this blood is conveyed by means of small vessels or chords, to and from the body, which until the chick is ready to make its exit, remains attached to them; how a bird can *rotate twice* in the shell, as Mr. Cleveland asserts, with this membrane attached to it, is unknown to us. The chick's head is placed under the right wing, and as Mr. Marot says, the hole is chipped, and not bored. Thirdly, it cannot be said that the chick does not expand. The air chamber, which at first does not contain over a fifth of a cubic inch of air, at the time of the chick's first attempt at release, is enlarged to from three to five times its original capacity, by the permeation of air through the shell, and which, being composed mainly of oxygen, supplies the embryo with means of living until its exertions liberate it. The inhalation of air by the chick; not only produces a momentary expansion, but, being its nourishment, it aids the growth of the bird, which is very rapid, and at the period of its evacuation has attained such size that with the aid of its beak and its struggles, it rends the membrane, if not too tough, and breaks the shell asunder.

Many writers and experimenters have discussed the present subject, but have, as a general thing, passed over the particulars and given us only the outlines. Much more might be learned by actual experiment and many disputed points decided.

WHERE do all the English Sparrows go to? At times the air in our cities is fairly black with them about this season. One cannot proceed a yard without encountering myriads of them upon the walks and fences or in the trees. About breeding time most of them have apparently disappeared, only a few being seen about the streets.

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ISSUED IN BEHALF OF THE SCIENCE WHICH IT ADVOCATES.

VOLUME II, NOVEMBER and DECEMBER, 1876. NUMBERS 9, 10.

Nesting of the Solitary or Wood Tatler.

(*Totanus solitarius*.)

ADOLPHE B. COVERT.

THE 19th day of May, 1870, was one of the warmest and most uncomfortable of the season. I had been out all day, collecting along the banks of the Huron river, which runs through the city of Ann Arbor. As the day was fast drawing to a close, I had left the river and passed through a deep woods, on my way home. As I reached the border, a fine view of the city lay before me; being somewhat tired, I sat down to enjoy it. The mosquitoes were very troublesome, and seemed determined to devour me alive, so I lighted a cigarette. As I sat quietly smoking, not a sound broke upon the air but the continuous hum of the insects, and the sweet bell like notes of the Wood Thrush. While meditating the success and mishaps of the day, my attention was attracted by a pair of Sandpipers, nimbly sporting on the edge of a small pond, a few rods from me. After wading about for a short time, one of them commenced to walk leisurely up the hill toward me; my dog had observed them, and was becoming uneasy; I placed my hand upon him to keep him quiet. The bird

came quietly on, now and then stopping to search among the fallen leaves. When directly in front of me, she stopped, stared intently a few seconds, and seeming satisfied that all was right, passed on a few feet, scratched away the fallen leaves and nestled down. My dog gave an anxious whine, when, hastily rising, she scratched the leaves together and flew back to her mate with a short, sharp whistle. Bidding my dog to charge, I arose and removed the leaves; four beautiful eggs lay beneath my eyes. The nest was nothing but a few forest leaves, which seemed fastened together with a saliva of the birds. The eggs measured 1.25 inches by 1 inch, were abruptly pyriform, of a bluish clay-color, with heavy blotches of blackish-brown on the larger half, and smaller spots toward the small end. I removed the nest and eggs to my collecting box, called my dog to heel, and walked within shooting distance of the birds, which were now huddled together on the bank of the pond, bemoaning the loss of their treasures. It seemed almost wicked to kill them, but science demanded it; I pulled the trigger and both fell. I hastened forward, picked them up, and they proved to be *Totanus solitarius*. It was the only nest of this bird that I ever found, although a pair of them used to play on the beach in front of my tent on Portage Lake, in the spring of 1875. I watched them intently, but fail-

ed to find their nest, so securely had they hidden it.

Blue Pigeons' Eggs.

WHILE out collecting one day the latter part of May, '76, I found in a hemlock tree, about twelve feet from the ground, a solitary nest of the Wild Pigeon. In the nest and on the ground below I found the broken shells. The eggs were evidently fresh laid, and had been broken but a short time, as one of the shells still contained part of the albumen which had not yet dried or evaporated. I did not see the parent birds at the time, but saw them flying about the place several days before. The shells were a *light shade of blue*, somewhat lighter than the eggs of the Black-billed Cuckoo. The eggs were two in number, but were broken beyond measurement; they were about the size of any other Pigeon's eggs. Can anyone explain?

Oswego, N. Y.

D. D. S.

Quite likely the eggs referred to are those of the Yellow-billed Cuckoo. The Wild Pigeon seldom if ever builds as low as twelve feet from the ground, and does not at least in these sections, build in evergreen trees. The nest of the Yellow-billed Cuckoo is so similar to that of the above bird, except in size, that many, from book descriptions, might easily mistake it for the nest of that bird.—Eds.

Since writing the above, we have received the shells from our correspondent. There can be no doubt but they are the eggs of *Ardea virescens*, as the excrement upon their surface and the circumstances of situation, etc., would not apply so positively to any other species.—Eds.

Birds' Eggs and Nests.

SPECIES mentioned in this issue;—

Eider Duck, Wood Duck, Canada Goose, American Woodcock.

606. EIDER DUCK.

This bird breeds abundantly on the coasts of both hemispheres. In North America it breeds most abundantly along the coasts of Labrador and countries to the northward. The nest is built in crevices and sheltered spots among the rocks, amid low bushes, moss, etc. It is composed of such substances as sea-weed, grass, moss, bits of wood, and down from the birds themselves. The nests are built in communities of from five to even hundreds. The eggs are from 5 to 7, pale olive-green, and 3 inches long by 2 inches wide. In shape they are longly ovoid, with the usual blunt small end. As soon as the eggs are laid, the female plucks down from her breast and places it around and beneath them, which forms probably the softest lining made by any species of bird, and "soft as eider down," has become an old time saying.

Within the last few years, the Eider Duck has been found to breed inland, on some of the lakes of the Hudson Bay region; here, at least, both birds and eggs are much more secure from the raids made upon them by the north Atlantic fishermen than on the open sea.

587. WOOD DUCK.

Unlike most Ducks, the Wood or Summer Duck nests in trees, a conspicuous example of the exceptions that occur in the habits of birds closely allied to each other. A deserted Woodpecker's, squirrel's or marten's hole is the situation usually occupied. In this hole are placed the eggs, numbering from six to twelve, or even more, upon a lining of dry grasses, weeds, feathers, down etc. As a general thing the Wood Duck prefers to nest over deep swamps and canebrakes, and in secluded places where there are numerous dead tree stumps. Not unfrequently, they nest in the hollow formed by the decaying of a stump, where the trunk had broken off; Audubon states that he found a nest in the fissure of a rock. So far as ascertained, no nests have ever been found on the ground.

The eggs are very light buff, scarcely if at all darker than cream. Measurements, from 2 by 1.30 to 2.15 by 1.55 inches. Shape, bluntly ovoid. In New York they commence to lay about the middle of April.

567. CANADA GOOSE.

The Wild Goose breeds in various portions of the United States, most abundantly in the northern States and British America. Dr. Coues states that they have been found nesting in trees, in which they offer a parallel to the Wood Duck, only with the Goose it is not a permanent characteristic. The nest is usually built on the ground near the water, in secluded heavily timbered situations. It is composed of sticks, mud, long grass, weeds, etc., forming a bulky and heavy affair. No information concerning the nests found in trees, other than that such have been found is presented, but it is presumed of course, they do not differ much from those found on the ground. According to Mr. Dall, six to eight eggs constitute a set. Most nests are found in Maine and the British Provinces, where they breed more abundantly than elsewhere in eastern N. A.

The eggs are regularly ovoidal, dirty white, whether naturally so or nest-colored I cannot say, and 3.65 inches long by 2.50 in width. The nests and eggs of Hutchins' Goose are the same as those just described with the exception that the eggs are a little smaller. Dr. Coues says that Hutchins' Goose does not breed in our limits, but its breeding grounds are confined to Arctic America.

522. AMERICAN WOODCOCK.

Our well known game bird the Woodcock breeds abundantly throughout the Middle and Eastern States. It is a singular fact that so few nests of this bird have been found, when compared with the number of nests of some other birds, equally hard to find. Yet, perhaps they are not so generally searched for, the bird itself being the object most desired. The Woodcock builds its nest in the deep woods,—not necessarily in a swamp, as has been stated, though

generally in damp situations,—and lays five eggs. If the rude collection of straws and grasses upon which the eggs are laid may be called a nest, the term has a very wide meaning, for it is scarcely as visible as those of some of the Sandpipers. Mr. Boardman has recently found that this bird breeds in Florida, a note that will be of much interest to ornithologists, as it seldom remains there during the breeding season.

An egg from New York gives the measurements, 1.55 by 1.15. Its ground color is grayish-cream or brownish-drab; this is spotted and dotted with light umber and lilac-gray. The spotting is rather scarce, and the only blotches are on the crown of the large end. The egg is shortly pyriform, though the approach of the small end is not as decided as in the eggs of the Sandpipers and Plover. In the Middle States the eggs are laid about the middle of April.

TO BE CONTINUED. "OVUM."

Oological Calendar for 1877.

THE following table of probable dates for full sets of eggs is based upon notes taken in the Middle States for eight years.

March 30; Owls, Golden Eagle. April 5; Red-tailed Hawk, White-headed Eagle, Raven. April 15; Red-should. and Sharp-shinned Hawks, Woodcock, Blue Jay. April 25; Ruffed Grouse, Broad-winged, Cooper's, Marsh, and Rough-legged Hawks, Crow, Robin, Downy, Hairy and Yellow-bellied Woodpeckers. April 30; White-bellied Nuthatch, Crow Blackbird, Blue Bird. May 5; Pigeon and Fish Hawks, Meadow Lark, most Sparrows and Finches, Cuckoos. May 15; Loggerhead Shrike, Red-winged Blackbird, Red-headed and Yellow-shafted Woodpeckers, Barn and Cliff Swallows, Belted Kingfisher, Sparrow Hawk, House Wren, Purple Finch. May 25; Bobolink, Pewee, most Flycatchers and Vireos, Chimney Swift, Thrushes, Cedar Bird, Purple Martin, Rough-winged Swallow, Cat Bird, Marsh Wrens, Tit-lark, Rose-breast-

[CONCLUDED ON PAGE 70.]



Devoted to Birds and Birds' Eggs

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NOVEMBER and DECEMBER, 1876.

OUR GAME LAWS.

SO much has been said concerning the present game legislation in the United States, that it seems as if it were impossible to state anything of interest on the subject of game protection. But when the appalling fact that four-hundred deer have been slain this winter in New York State alone,

by the infamous method of "crusting," is made known to us, it is quite time that sufficient interest is taken in the subject, to provide some more efficient means for the protection of game. As far as the laws are concerned, there is much less anxiety, tho' some of them present a wide field for correction and revision. The prime difficulty is in enforcing the laws. Through the central portion of this State, the game regulations are heeded about as much as could be expected of the numerous "pot-hunters" and idle "sportsmen" who throng the country; and this is all due to the lack of game constables. It is impossible to preserve game without someone to see that all known violations of the game laws are promptly punished, and that old offenders are apprehended for every repetition of such carelessness. It is a pleasure to know that the sportsmen's associations are doing all in their power toward the protection of game, and if they give the cause such attention as present appearances would indicate the coming season, there will be no scarcity of game.

We notice a feature in the laws of several States, notably those of Massachusetts and Connecticut, that should be advocated by the sportsmen of all the Middle States; that is, the extension of the close season for Woodcock to the same period as for Grouse. The corresponding present statute of New York says that no Woodcock shall be killed between January 1st and July 4th. The close season for Ruffed Grouse might just as well be shortened to the 4th of July, if this law is to continue, as more Grouse are killed out of season by sportsmen who go Woodcock shooting than otherwise;—the temptation to shoot a Grouse when one is seen, is too strong to be resisted. An amendment might also be made to the sections regarding deer and Quail in this State, fixing a period of a term of years, during which no deer nor Quail shall be killed.

SHOULD any of our correspondents note anything of interest during the spring migrations, we should like to have them communicate the same to us for publication.

RECEIVED: Catalogue of the Birds of Michigan, Food of the Birds of Illinois as related to Agriculture, Guide and Catalogue to Woodward's Gardens, San Francisco, and the constitutions and rules of several ornithological societies and sporting clubs.

American Birds.

Fascinated by Light.

PROFESSOR SPENCER F. BAIRD, in a recent letter from Cape Hatteras, published in the *American Sportsman*, says:

"On the night of October 17, 1876, I was on the top of Cape Hatteras light-house. It was a very dark night and 'misting.' The wind was blowing thirty-five miles per hour from the north-east. As soon as it was fairly dark I could see thousands of small birds flying around the leeward of the tower. It was a grand sight, as the lens of the light would perform its steady revolution, throwing its dazzling rays upon them while seeking shelter by hovering close up under the lee of the tower. As soon as the light would fall upon them they would fly toward it, and come in contact with the lantern with such force that they were instantly killed. At one time the whole element was ablaze with them, shining in the rays of the light like myriads of little stars or meteors. The moon arose by ten o'clock, which afforded them light to go on their way south (for they were coming from the north and going down the coast south). I do not think one bird stopped alone or went into the woods at all, as not one was seen, for I particularly noticed. After the moon was up, one of the birds came striking the lantern glass. I went out and gathered from the balcony of the watch-room and lantern three hundred and fifty dead birds, besides one hundred and forty that were picked up the next morning off the ground at the foot of the tower, which had been blown off the balconies. They were a spe-

cies known here as 'myrtle bird,' or 'winter yellow' bird. They were about the size of the sparrow, with gray back and head and yellow breast. They are excellent food."
—*Harper's Weekly*.

Ornithological Notes.

OUR correspondent Mr. J. H. Severance, sends us the following interesting notes on the winter birds in his section of the State:

—But very few Owls have been captured about here this winter. Last year, over a dozen specimens of the White Owl and a few of the Horned Owl were caught *alive*, near this place, but I have heard of but two or three such instances this season. I suppose that the weather has not been sufficiently cold (especially this month); to drive the migrating species so far south as this State, or else our hunters have not been so fortunate as usual in discovering them. I recently had a Screech Owl (*Scops asio*) brought to me to be mounted, and it is the smallest one of that species I have ever seen, its length being but little over 7 (seven) inches. The general color above is a light rufous or cinnamon, with the usual mottled appearance below.

—I have not seen any Pine Grosbeaks or Mealy Red-polls this winter, which I hardly know how to account for. Last year I procured several specimens of both, and two years ago this winter, they were very numerous.

—A few Robins have been seen here this month, but as the prospects for spring seemed rather discouraging, they did not remain with us long.

—Snowbirds are not so numerous, apparently, this year as last, and I have seen only a few small flocks.

—Ducks are reported to be moving northward. This is considered by sportsmen to be a sure sign of an early spring. I hope it may be so, for I am anxiously awaiting the return of our resident birds, and the spring migrations of the non-residents.
Mexico, N. Y., Feb. 1877.

[Does not our correspondent refer to the Lesser instead of the Mealy Red-poll?]

—A NOTE on the occurrence of the Black Rail (*Porzana jamaicensis*) appears in the *Forest and Stream*. Considering the rarity of this bird and the extremely few taken, this note is of some interest.

—SINCE the list of birds was published in the Ornithological Directory, two species have been added to the Birds of Central New York. They are, *Somateria spectabilis*, King Eider, taken on Onondaga Lake; and *Larus tridactylus*, Kittiwake Gull, taken on Lake Ontario.

—THE London Zoological Garden contains among its novelties in natural history, an American Robin, captured at Dover. This is the only instance of the occurrence of our Robin in the wild state in England, which would seem singular, as it has been observed on the continent. It is supposed to have been transported thither by western winds.

—AMONG the interesting collections of the British Arctic Expedition, are a number of birds taken at the northernmost limits of the regions explored. We find the prevailing species to be the Snowy Owl, White Ptarmigan and Snow Bunting. The first mentioned were abundant at 82 deg. 52 min., the northernmost limit of birds.

—A CORRESPONDENT in Iowa, in answer to the article on the American Bittern in a late issue of THE OOLOGIST, says: "The writer seems to doubt the flocking of the Bittern at nesting time. I have often flushed half a dozen in one swamp, and have found their nests within a few hundred yards of each other, and find they breed in the same locality year after year."—C. N. P.

[FROM PAGE 67.]

ed and Blue Grosbeaks, Indigo Bird, Lazuli Finch, Scarlet Tanager, Orioles, most Herons, Bittern, Sandpipers, Plover. June 5; most Ducks, Warblers, Yellow-breasted Chat, Humming Bird, Oven Bird, second broods of Red-winged Blackbird, Flicker, and Sparrows. June 10; Yellow Bird.

AROUND THE WORLD.—An expedition is on foot for explorations around the world, which has for its objects the several branches of natural science. This expedition will start from New York, and will proceed south to the Bahamas; thence to the Amazon and the Straits of Magellan; thence westward, touching at many of the Polynesian Islands, Australia, New Guinea, etc. Here many hitherto unexplored regions will be thoroughly sectioned by able scientists. From the East Indies, the Expedition will strike for the Mediterranean; thence to the Holy Land, Egypt, and other eastern countries; thence to France, England and New York. The results of the Expedition will prove of the most valuable character, and will contribute to our present knowledge especially of birds, much that otherwise might remain in obscurity for ages. The Expedition will be gone two years.

DOES THE FISH HAWK EVER TAKE DEAD FISH?—This subject has been agitated some time in the *Forest and Stream*, but there seems yet to prevail much difference of opinion on the subject. A correspondent of that paper who signs himself "Roamer," contributes an article of some length on the subject, wherein he is rather inclined to cede a point in the affirmative, though the gist of his argument shows that his experience in the matter would corroborate the statements to the contrary. Whether the fact of the hard pressure of the Fish Hawk for food occurred to the writers, we do not know, but there is sufficient evidence already brought before us to confirm the fact that the Fish Hawk certainly does occasionally take dead fish. On the 13th of July, 1874, while shooting, we happened at a mill pond which had been drawn off a day or two before, that it might be cleared of the rubbish which had accumulated in its bottom. The bed of the pond was strewn with dead fish, mostly of the kind known as the "mud-sucker," which were kept moist by the slime of the pond. While watching the motions of a Sandpiper, a shadow suddenly

flashed by and a Fish Hawk glided down, and snatching one of the largest fish, flapped quickly away. The Hawk must certainly have seen us, as we were standing upon the edge of the pond not more than ten rods distant, but being in all probability pressed for food, it had ignored alike the character of the fish and our presence. Mistaking the bird at the distance we saw it was quite impossible, and, though it required some time to convince ourselves that so striking a fact had actually occurred, it appeared to us that such a thing could and did sometimes take place. This was an extreme case, and one which doubtless, never has before occurred in the presence of an observer, else we should have some record of it. It is well known that the Eagle often carries with him when hungry the characteristics of the Vulture, but such is not an exceptional case. Had it been one of these birds in the instance mentioned above, no curiosity would have been aroused. Perhaps the above incident will call up others that have been witnessed by observers in other sections.

Sporting.

Capt. Bogardus and His New Trap.

THE new glass ball trap invented by the champion of the shot-gun, Captain Bogardus, as a substitute for the ordinary Pigeon trap, was put to a severe test of efficiency on the evening of March 15, in the Hippodrome, New York. The remarkable feat of breaking 1000 glass balls (the substitute for birds) was accomplished in about an hour and forty-three minutes. The following extract of the shoot is taken from the *Forest and Stream*: "At the upper end of the arena a wooden screen had been erected and covered with white muslin. Some ten or fifteen yards in front the six traps were arranged, with strings leading to the shooter's stand, eighteen yards fur-

ther in the rear. Capt. Bogardus used Dittmar powder and No. 8 shot, shooting $3\frac{1}{2}$ drachms measurement of black powder, of the former and $1\frac{1}{2}$ ozs. of the latter. Many of the balls were hit but not broken, which we think would not have been the case had the captain used Childs shot. He had set his task to be done in two hours and forty minutes, but it was evident after the first hundred balls that he would be even aside of that time. The first five-hundred were shot at in 45 min. 50 sec., when an intermission of 18 minutes was taken, the second five-hundred were shot at in just 43 min., and the 136, necessary to make up the misses occupied 15 minutes. When the shooting was over, time had been beaten 57 min. and 10 sec."

On the 29th of March Capt. Bogardus gave another exhibition in the Hippodrome. This time he had backed himself to break 1000 glass balls in 100 minutes. The remarkable endurance required to perform this feat was even surpassed, as it required only a little over an hour and seventeen minutes. He made the score of 155 shots without a miss, and in all, the misses amounted to but 28.

Captain Bogardus is now giving exhibitions and matches throughout the country with his glass ball trap.

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MEMORANDA FOR 1876.—The following dates represent the average time of full sets of eggs for 1876. The data is that of Central New York. Doubtless collectors may by a comparison with their notes find much of importance for future use.

Robin (first brood), April 20; Crow, April 15; Broad-winged Hawk, May 10; Red-shouldered Hawk, May 1; Meadow Lark, May 15; Crow Blackbird, May 15; Bobolink, May 28; Sparrows, and Sparrow Hawk, May 25; Robin (second br'd), June 1; Rose-breasted Grosbeak, June 1; Belted Kingfisher, May 18; White-bellied Swallow, May 28; Purple Martin, June 1.

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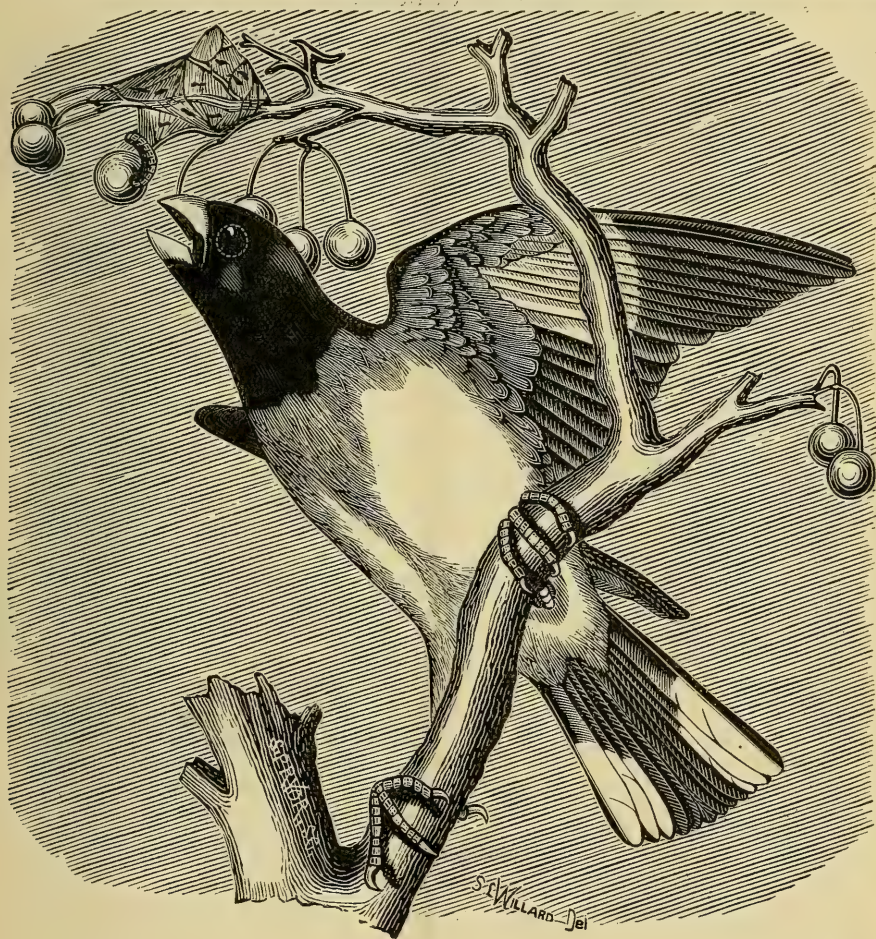
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THE ROSE-BREADED GROSBEAK,
GUIRACA LUDOVICIANA, GRAY.

By J. J. AUDUBON, from Birds of North America.

ONE year, in the month of August, I was trudging along the shores of the Mohawk River, when night overtook me. Being little acquainted with that part of the country, I resolved to camp where I was; the evening was calm and beautiful, the sky sparkled with stars, which were reflected by the smooth waters, and the deep shade of the rocks and trees of the opposite shore fell on the bosom of the stream, while gently from afar came on the ear the muttering sound of the cataract.

My little fire was soon lighted under a rock, and, spreading out my scanty stock of provisions, I reclined on my grassy couch. As I looked around on the fading features of the beautiful landscape, my heart turned towards my distant home, where my friends were doubtless wishing me, as I wished them, a happy night and peaceful slumbers. Then were heard the barkings of the watch-dog, and I tapped my faithful companion to prevent his answering them. The thoughts of my worldly mission then came over my mind, and having thanked the Creator of all for his never-failing mercy, I closed my eyes, and was passing away into the world of dreaming existence, when suddenly there burst on my soul the serenade of the Rose-breasted bird, so rich, so mellow, so loud in the stillness of the night, that sleep fled from my eyelids. Never did I enjoy music more: it thrilled through my heart, and surrounded me with an atmosphere of bliss. One might easily have imagined that even the Owl, charmed by such delightful music, remained reverently silent. Long after the sounds ceased did I enjoy them, and when all had again become still, I stretched out my wearied limbs, and gave myself up to the luxury of repose. In the morning I awoke vigorous as ever, and prepared to continue my journey.

I have frequently observed this beautiful species, early in the month of March, in the lower parts of Louisiana, making its way eastward; and when residing at Henderson in Kentucky, and in Cincinnati in Ohio, I have noticed the same circumstance. At this early period, it passes at a considerable height in the air, and now and then alights on the tops of the tallest trees of the forest, as if to rest awhile. While on wing it utters a clear note, but when perched it remains silent, in an upright and rather stiff attitude. It is then easily approached. I have followed it in its migrations into Pennsylvania, New York, and other Eastern States, through the British Provinces of New Brunswick and Nova Scotia, as far as Newfoundland, where many breed, but I saw none in Labrador. It is never seen in the maritime parts of Georgia, or those of the Carolinas, but some have been procured in the mountainous portions of those States. I have found them rather plentiful in the early part of May, along the steep banks of the Schuylkill river, twenty or thirty miles from Philadelphia, and observed, that at that season they fed mostly on the buds of the trees, their tender blossoms, and upon insects, which they catch on wing, making short sallies for the purpose. I saw several in the Great Pine Forest of Pennsylvania; but they were more abundant in New York, especially along the banks of the beautiful river called the Mohawk. They are equally abundant along the shores of Lakes Ontario and Erie, although I believe that the greater number go as far as New Brunswick to breed. While on an excursion to the islands at the entrance of the Bay of Fundy, in the beginning of May, my son shot several which were in full song. These islands are about thirty miles distant from the main land.

The most western place in which I found the nest of this species was within a few miles of Cincinnati on the Ohio. It was placed in the upright forks of a low bush, and differed so much in its composition from those which I have seen in the Eastern States, that it greatly resembled the nest of the Blue Grosbeak already described. The young, three in number, were ready to fly. The parents fed them on the soft grains of wheat which they procured in a neighboring field, and often searched for insects in the cranies of the bark of trees, on which they alighted sidewise, in the manner of Sparrows. This was in the end of July. Generally, however, the nest of the Rose-breasted Grosbeak is placed on the top branches of an alder bush, near water, and usually on the borders of meadows or alluvial grounds. It is composed of the dried twigs of trees.



ISSUED IN BEHALF OF THE SCIENCE WHICH IT ADVOCATES.

VOLUME II,

JANUARY, 1877.

NUMBER 11.

Our Present Knowledge of the Nidification of the American Kinglets.

THE following article by Ernest Ingersoll, is taken from a recent number of the *Nuttall Ornithological Bulletin*:

In the hope of eliciting from some of the many readers of *The Bulletin* further information concerning the breeding habits of the American Kinglets, or at least putting them upon the alert for further information, I have deemed it well to bring together what is at present known respecting the nidification of these birds.

Of the breeding of the Ruby-crowned Kinglet (*Regulus calendulus*), not much is known, although the bird is found at different seasons in all parts of North America. In the Rocky Mountains it breeds among the most elevated forests. Mr. J. A. Allen found young in July near Mt. Lincoln, Col.; Mr. Ridgway gives it as breeding among the peaks of Northern Utah; and Mr. Henshaw in Arizona. It is also supposed to breed in Northern New Jersey, in Western New York, in Maine, and in the islands of the Bay of Fundy. In Western New York a nest which contained young was reported to have been built in the fork

of a tree. Males and females have both been observed in summer about Chestnut Hill, Philadelphia, and Mr. Gentry thinks it nests on the wooded heights along the Wissahickon. Dr. Coues in his "Birds of the Northwest" considers that he has sufficient evidence to show a breeding range throughout the mountains of the west from 9,000 feet upward, thence breeding eastward along the northern boundary of the United States to Maine and Labrador, and probably sending a spur southward along the Alleghany Mountains. Northwestward it reaches Alaska.

The most satisfactory information is furnished by Mr. J. H. Batty, who found a nest near the Buffalo Mountains in Colorado, on June 21st, 1873, which contained five young and one egg. The nest was on the branch of a spruce tree, about fifteen feet from the ground, and was so large "that it could scarcely be got into a good sized coffee cup." It is described as "a loosely woven mass of hair and feathers, mixed with moss and some short bits of straw." The egg, Mr. Batty tells me, was very much like that of the common House Wren, but a little lighter in color. Both parents were assiduously bringing larvæ of insects to the young, whose appetites were unappeasable. Mr. Henry W. Henshaw also reports finding a neatly finished nest on a mountain near Fort Garland, Col. It

was built on a low branch of a pine, and the male was singing directly overhead; but although he waited some time, Mr. Henshaw did not see the female. "The nest was a somewhat bulky structure, very large for the size of the bird, externally composed of strips of bark, and lined thickly with feathers of the Grouse." Of the eggs of this Kinglet nothing further is known.

Little more can be said in respect to the Golden-crested Kinglet (*Regulus satrapa*, Licht.). Its range is nearly as extensive, but more northerly; It does not descend in winter beyond Mexico. Nothing is known with certainty of its breeding anywhere in the United States, although it may be found to do so in the northern mountainous portions. Mr. Thomas G. Gentry is confident that it nidificates in cavities in the tall trees which crown the heights of Eastern Pennsylvania, despite the generally accepted notion that it follows its foreign cousin in building a pensile nest and laying white eggs, finely sprinkled with buff dots, in size about equal to those of Humming Birds. It has also been inferred that this Kinglet raises two broods in a season. Mr. Nuttall and Dr. Cooper both found it feeding full-fledged young on the Columbia river, on May 21st; and Audubon observed the same thing in Labrador in August. Mr. Maynard found it common at Lake Umbagog, Me., in June; he says it breeds there, and that, judging from the condition of female specimens dissected, it deposits its eggs about June 1st. Several pairs were found in the thick woods there, but no nests could be discovered; he thought they built, probably, in the long hanging moss so abundant on the trees in those northern forests. Mr. Herrick puts it down positively as breeding on the island of Grand Menan, and Dr. Brewer in Maine. Mr. Allen informs me that he met with young attended by the parents, the third week in August, 1876, on Mount Monadnock, New Hampshire, which he has no doubt were hatched in the immediate vicinity. Mr. J. K. Lord states that these birds were abundant on Vancouver's Island and the adjacent coast, where he

found them building pensile nests suspended from the tips of high pine branches, in which they laid from five to seven eggs. He does not describe the eggs, which was hardly to be expected, perhaps, considering the half-use he seems to have made of his opportunities.

Herr F. W. Baedeker has figured the egg in the *Journal für Ornithologie* (1856, p. 33, Pl. I, Fig. 8), and also in his large work on the eggs of the birds of Europe. Dr. Coes observes, in a private communication to me, "The plate indicates a rather roundish egg, though the two specimens figured differ noticeably in size and shape; they are spoken of in the text as 'niedliche kleine Eirichen mit lehmgelben Flekschen auf weissen Grunde,' and compared with those of other species illustrated on the same plate."

Regulus Cuvieri, described by Audubon from a specimen taken near the banks of the Schuylkill river, has remained unknown to ornithologists ever since.

Birds' Eggs and Nests.

EGGS described in this issue:—

Parkman's Wren, Brewer's Blackbird, Red-shafted Flicker, Tufted Titmouse.

271. PARKMAN'S WREN.

This is the western variety of *Troglodytes aedon*, and is usually called the Western House Wren. Beyond geographical distribution, this bird does not differ materially in habits, nest and eggs, from the eastern variety. Probably they nest as a rule in more secluded situations than the latter. The nest is a bulky affair, formed almost entirely of sticks, and lined with a few feathers. It nests plentifully in the boxes provided for them by man, and also in knotholes, in crevices in posts, &c.

Some of the eggs of this bird are indistinguishable from those of the eastern variety, still as a general thing they are a little lighter, and the fine reddish dots are less

distinct. A specimen from California measures .64 by .48 of an inch. These measurements will hold good with the majority of specimens. From five to nine eggs constitute a set. Incubation commences about June 1.

418. BREWER'S BLACKBIRD.

This bird is an inhabitant of the western portions of North America, where it is as abundant in some sections as our Crow Blackbird is here. Its breeding habits are not unlike those of the latter bird, but it does not seem to prefer districts near the habitations of man, to the wilder and more swampy districts, as does the Crow Blackbird. The nest is constructed solidly, of a great multiplicity of sticks, and is placed singly or by twos and threes, in a small tree or sapling, sometimes in a bush. Nests have been found in all positions and at all reasonable distances from the ground, but like the Crow Blackbird, they prefer the topmost branches for nesting. Those who have seen nests of 421 can form a very correct idea of that of the Blue-headed Grackle.

The eggs are usually five, oblongly oval, dull grayish or greenish-white, marked sometimes all over, at others only on the large end, with lilac-brown, raw sienna, light umber, chocolate and rich brownish-black. All the eggs in a set may vary in coloration and disposition of markings quite considerable. The markings are either in blotches or fine spots. Full complements of eggs are taken between April 25 and May 20.

98. RED-SHAFTED FLICKER.

We find this bird only in the west, where in the more extreme localities it replaces the eastern type—*C. auratus*. To describe the eggs and nest of this bird would only be repeating what all collectors know, as, excepting that their surface is less glossy and perhaps not as clear, they are identical with those of the Golden-winged Woodpecker. The nesting of this bird is in holes in trees, at an ordinary elevation. No materials are carried for the nest, the chips and

shavings at the bottom of the hole forming sufficient lining for the eggs, which range in number from four to eight.

In order to obviate the necessity of describing individually the eggs and nests of each species of this family, I quote from Dr. Coues on the subject: "The birds all lay in holes of trees, dug by themselves, depositing the eggs—generally to the number of five or six, but sometimes more or fewer—upon the chips and dust at the bottom. The eggs are of a more nearly globular shape than is usual among birds, with a shell of crystal smoothness and purity, white, unmarked. Almost the only difference in the eggs of the species is in size, which corresponds in general with that of the parent, though, in the cases of our two largest species, the size appears disproportionately small. Thus, an egg of *H. pileatus* measures only 1.25 by .98, thus being not much bigger than a good-sized Flicker's egg (1.18 by .88)."

285. TUFTED TITMOUSE.

Of the breeding of the present species not as much is known as might be expected. The bird is not uncommon in all the Middle and Central States, but breeds most abundantly in Tennessee, Kentucky, Michigan, Virginia and the Carolinas. In New York they rarely breed except in the extreme southwestern portions of the State. As in the case of the Chickadee, this Titmouse lays its eggs, to the number of from six to eight, in knotholes of trees and stumps, occasionally in cracks in posts, and may be found to nest in crevices in rocks. Doubtless it has the same characteristic as the Black-capped Titmouse, as regards a possible set of eggs, for the latter has been known to deposit as many as eleven before commencing incubation. The eggs are white, sometimes with a faint pinkish tint, entirely covered with very fine dots and points of reddish-brown, often pale pinkish-brown. Two specimens measure .68 by .52 and .70 by .50 inch. Shape, shortly ovoidal and ovoidal. "OVUM."

TO BE CONTINUED.



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**SOME DEDUCTIONS DRAWN
FROM COMPARISON OF THE
CHARACTERISTICS OF BIRDS.**

THE inferences to be drawn in contemplating some of the peculiarities of birds are often very striking, and present many beautiful phases of characteristic. Ornithologists sometimes think that the old

routine of describing birds and their habits is too general and unvarying in character to be written and re-written, and continually harped upon, and have entered into the agreeable field of studying the characteristics of birds, and drawing therefrom conclusions based on comparisons made upon some particular traits. In this, the class of birds offers a wide range for research and deliberation. Undeniable as some of the facts are concerning ornithology, the agencies affecting them present such a diversified scope, that many observers are reluctant to yield to simple description of verity, but aim to arrive at results more satisfactory by induction.

Did it ever occur to the readers of this paper what relations there exist between the nests of birds and certain of their manners not strictly breeding habits? A line of perfect congruity seems to occur in many of the opposite habits of birds, which, when traced to a point of logical comparison, show how beautiful are the dispositions of nature. A very forcible example is found in the correspondence of the nests of birds to their individual habits of frequentation and food, and in the correspondence of their plumage, whether bright or dull, with the prominence of the objects and places they frequent. The former furnishes the more substance for study; the latter is plainer at the outset. The *Sylvicolidae* or Warblers all build neat nests, of materials more or less fine, according as a general thing to the positions in which they are placed. Those building nearest the ground construct less beautiful nests than those which nidificate in trees, and they are always destitute of the elegant mossy appearance and cosy cup-shape, of those of our true Wood Warblers. Such as are built upon the ground are not necessarily still more humble in material, but are more bulky and sizeable. In the eggs of these birds, the most noticeable difference is in the tint of the shell; those of the Wood Warblers are always more delicately colored than those of the Swamp Warblers, a fact that with its due proportions, applies to the eggs of all small birds

as regards the relative distance of the nest from the ground.

Only on the topmost branches of the tallest trees do we find the majority of the brightest-colored small birds; only at a great height we find their nests; they as a rule search for their food in the tops of the trees; withal, we scarcely, if ever find them to frequent bushes or the ground. The brightest-plumaged small birds construct the most beautiful nests, and these make a specialty of certain food and locality; on the other hand, the plainer birds always build their nests nearer the ground, they are nearly always more or less coarse, flat, and loosely constructed; their food and places of frequentation are not so distinctive. Our beautiful little Wood Warblers, those which nidificate in the trees, often at a great height, make their nests of delicate vegetable substances, such as the finest grasses, lichens, fibers of moss, pieces of vine-bark, occasionally feathers, the down from various plants, etc. These birds seek the minute insects to be found in the tops of the trees, and though not as beneficial as our garden Warblers, they clear the atmosphere and lofty vegetation of countless myriads of injurious insects.

Those birds which build large bulky nests range wide for, and subsist upon a great variety of food, and, except in the case of waders and swimmers, do not confine themselves to any particular situation while in pursuit of food. Their eggs, as a rule are either dull or dark colored, and the parents show less solicitude for the safety of their nests and young, than those birds which build elaborate structures. Such of the larger birds as breed near the ground are more prolific, and those most prolific exhibit less anxiety concerning their eggs and young, than less prolific ones. If we draw a line of comparison between the nests of small birds and those of large ones, conceding proper allowance for the size of the builders, we will find that the latter are extremely negligent in the selection of materials and in construction. Yet to make a comparison of some of the less tasteful a-

mong the smaller architects with those just mentioned, a much greater degree of coarseness is noticeable.

We might go on with such a series of relations between merely the nests of birds and their characteristics, for two or three pages, so varied and marked are the conclusions to be derived from them.

IN the list of the Birds of Central New York, the occurrence of the Shore Lark (*Eremopila alpestris*) was wholly omitted. It is a regular spring and fall visitant here and several specimens have been taken about Utica in the last two years.

American Birds.

Plectrophanes Lapponicus in Texas.



ON January 4th 1877, I made the following entry:

"Saw a strange bird to-day in company with Shore Larks. It was the size of Maccown's Bunting and somewhat the color above; had a reddish-brown streak on the cheek, and some whitish on the side of the neck and auriculars; also throat whitish. The bird flew wildly and high, and while flying, uttered a louder, clearer "clink" than the note of the Shore Lark. It had considerable resemblance to some of the Sparrows; it was feeding in the road where the snow was melting away. I think I saw one some days since."

On January 5th, I took my gun and went in search of the bird I had seen. Near the same place, the note of a bird similar to the note I had heard on the 4th, attracted my attention to a bird which I shot and which proved to be a ♀ of *Plectrophanes lapponicus* (Linn.). At another time, I fired into a flock of what I supposed were *P. pictus*, and killed a ♂ and ♀ of *P. lapponicus*. The ♂ resembled the bird I had first seen, having the black and chestnut about the head and neck. After this I

frequently found them in company with *P. pictus* and *Maccownii*, but have seen no individual flocks of *P. lapponicus*.

Gainesville, Texas. G. H. RAGSDALE.

Foreign Birds.

The Impeyan Pheasant or Monaul. (*Lophophoras resplendens*.)

BY FRED. J. DAVIS.

NO doubt some of the readers of THE OOLOGIST, especially such as are inclined to practice the beautiful art of taxidermy, have in looking over the price list of some foreign bird-skin dealer, noticed the skin of this elegant bird quoted at \$15 to \$20 or more; or better, perhaps some have seen or possessed one of them. If so, they can understand more easily what caused me to attempt to enlighten such of the readers of THE OOLOGIST as are unacquainted with the history and habits of the present elegant representative of this distinguished family.

The Monaul may be described as follows: Body quite powerful; wings like those of most Pheasants; tail rather long; upper mandible quite curved and pointed; feet of medium size, those of the male furnished with spurs. The male is beautifully colored and very glossy, and has a bare spot around the eye; the head is decorated with a crest of numerous feathers, which are devoid of web at the roots and very broad at the extremities. The head and throat are of a metallic green; the crest is also of that hue, but resplendent with a golden sheen; the nape and upper part of the throat are of such a glossy carmine red that they gleam with all the brilliancy of the ruby; the lower parts and back are bronze-green, shaded with gold; the rest of the mantle, the wing and upper tail coverts, are brilliant violet or bluish-green. Some few feathers on the under side are white, but the surface is principally black, shining with green or pur-

ple on the breast and lustreless on the belly; quills black; tail reddish-brown, which is the only blemish on the beauty of the bird; eyes hazel; legs and feet grayish-green. Length twenty-six and extent thirty-three inches. The female is white upon the throat; the rest of the plumage is yellowish-brown, marked with darker brown; primary quills blackish; secondaries and tail feathers yellowish-brown marked with black. She is smaller than the male.

Mountaineer gives a very full description of the habits of this bird, from which I will give a brief extract. The Monaul is found on almost every hill of any height, from the first great ridge of the Himalayas above the plains to the limits of the wooded districts, and in the interior is the most plentiful of the game birds.

In summer, when the vegetation springs up and makes the forests almost impassable but few are to be seen, except near the summits of the ridges jutting from the snow, where in morning and evening, when they come out to feed, they may be seen in the green glades of the forest and on the green slopes above. In the cold season when the rank grass and herbage decay, they begin to collect together. The wood seems full of them, and in some places, hundreds may be flushed in a single day. The males and part of the females in summer ascend to where the hills attain considerable height. In autumn they may be found in the forest where the ground is covered with decayed leaves; as winter approaches and the ground becomes covered and frozen they descend lower. The females and young birds resort near the villages in the woods, and may often be found in numbers in the fields. In autumn and winter many often collect together in the same quarter of the forest, although so scattered that each bird appears to be alone; then again a score or more will start within a few hundred yards. The females keep more together than the males. On the lower or exposed side of the hills scores of females and young may be seen, while higher up none but males can be found.

In summer they do not keep strictly in pairs. I doubt whether they pair at all where they are numerous, as several may often be seen together. When the female begins to lay the male deserts her and after that pays no attention whatever to her. From spring till October it is wild and shy, but as the cold season approaches it becomes quite tame, and may often be approached within gun-shot, and when flushed, it usually alights on a tree at no great distance.

In spring, when the snow has melted and they have no difficulty in procuring food, they often fly a great distance when disturbed, but in winter when food is scarce, they do not much heed the appearance of man. The females seem always less shy than the males. When making a long passage, after flying a short distance they cease flapping their wings and soar along at a considerable height in the air, the magnificent plumage of the male when thus elevated in the rays of the sun making it appear in many respects the most beautiful of the Pheasants.

The whistle of the Monaul is loud and plaintive, and may generally be heard early in the morning or toward evening. When the shades of a dreary winter evening are closing in the snow-covered hills of the Himalayas, the melancholy call of this Pheasant seems to correspond with the cheerless aspect of nature around. It feeds in autumn on a grub which lies under decayed leaves or in the grain fields, where it may often be seen digging. At other seasons it feeds on roots, leaves, acorns, seeds, berries, &c.

The female makes her nest under a bush or tuft of grass, and lays five eggs, of a dull white color speckled with reddish-brown. The young are hatched about the end of May. The flesh is thought by some to be as good as that of the turkey, by others scarcely fit to eat. In autumn and winter the young are undoubtedly excellent food. They have been reared in confinement in England. The reader will doubtless recognize a similarity in some of the habits of this bird to those of our Ruffed Grouse (*Bonasa*

sa umbellus). One in particular I will mention, that is, when disturbed in winter it often alights in trees, when, according to Mountaineer, the sportsman may shoot one without much disturbing the others.

Peculiar Habit of the Hornbill.

TRAVELERS have often endeavored to account for the peculiar habit of the African Hornbills of plastering up the opening of the cavity used as the nest, but none have yet come to any satisfactory conclusions regarding it. Many say that the hole, being originally of large size, would readily admit numerous destructive animals and that the mud is placed over it to exclude these. The narrow aperture left for the bill of the bird is thus too small for the entrance of any animal. Some say the birds never use anything but the fine light clay found in the beach-lands for this purpose; others state that any kind of earth sufficiently moist is used, except clay, asserting that if clay were used, it would in such a warm climate become so hardened that it would be impossible for the birds eventually to break it. A query arises here: does the female Hornbill toss her food while thus imprisoned before swallowing it? Writers do not seem to have made note of this point, or to have ascertained whether or not the male prepares the food previous to feeding the female. Singular as it may seem, most of the accounts given by observers agree as to the species of tree selected for the nest, that is the mopane, a tree of exceeding hardness and toughness.

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The English Sparrow Question.

MR. GENTRY, in his work on the Birds of Pennsylvania, says in regard to the question of this bird's value in America: "Its pugnacity detracts much from its general behavior. It lays claim to a particular place to the exclusion of the rightful proprietors, and prepares to defend it at all hazards. What individual strength fails to accomplish, is brought about by combination, for in union there is power. Many of our most useful birds are objects of its unprovoked vengeance, and unable to cope with prodigious numbers, are forced to forsake the scenes of past associations and joys for less congenial places. Many of the lawns and groves which surround the residences of opulence, which once rang with merry songs of the Robin, Blue-bird, and Song Sparrow, now resound with the harsh and inharmonious voices of this species.

"The bird deserves our detestation for other reasons than those just enumerated. Our own experience as well as that of many friends, most conclusively prove its power of destructibility. * It is true that during the breeding-season it destroys many caterpillars for the support of its young, but this good is more than outweighed by the mischief which it commits. * "

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THE ROSE-BREADED GROSBEEK.

[Continued from supplement for Nov. and Dec.]

mixed with a few leaves and the bark of vines, and is lined with fibrous roots and horse-hair. The eggs are seldom more than four, and I believe only one brood is raised in the season. Both sexes incubate. I have found the nest and eggs, on the 20th of May, on the borders of Cayuga Lake in the State of New York.

The flight of the Rose-breasted Grosbeak is strong, even, and as graceful as it is sustained. When travelling southward, at the approach of autumn, or about the 1st of September, it passes high over the forest trees, in the manner of the King-bird and the Robin, alighting toward sunset on a tall tree, from which it in a few minutes dives into some close thicket, where it remains during the night. The birds travel singly at this season, as well as during spring.

I am indebted to my friend JOHN BACHMAN, for the following information respecting this interesting Grosbeak: "One spring, I shot at a beautiful male bird of this species, in the State of New York. It was wounded in one foot only, and although I could not perceive any other injury afterwards, it fell from the tree to the ground, and before it recovered itself I secured it. Not having a cage at hand, I let it fly in the room which I had made my study. Before an hour had elapsed, it appeared as if disposed to eat; it refused corn and wheat, but fed heartily on bread dipped in milk. The next day it was nearly quite gentle, and began to examine the foot injured by the shot, which was much swollen and quite black. It began to bite off its foot at the wounded part, and soon succeeded in cutting it quite across. It healed in a few days, and the bird used the mutilated leg almost as well as the other, perching and resting upon it. It required indeed some care to observe that the patient had been injured. I procured a cage for it, to which it immediately became reconciled. It ate all kinds of food, but preferred Indian corn meal and hempseed. It appeared fonder of insects than birds of that genus are supposed to be, and ate grasshoppers and crickets with peculiar relish. It would at times sit for hours watching the flies, as these passed about it, and snatched at and often secured such wasps as now and then approached the pieces of fruit thrown into the cage. Very often, of fine moonshiny nights, it would tune its pipe, and sing sweetly, but not loudly, remaining quietly perched and in the same position. Whilst singing during the day, it was in the habit of opening its wings, and gently raising them, somewhat in the manner of the Mocking-bird. I found it very difficult to preserve this bird during winter, and was obliged for that purpose to place it in a room heated by a stove to summer temperature. It was a lively and very gentle companion of my study for nearly three years; it died of cold the third winter. It frequently escaped from the cage, but never exhibited the least desire to leave me, for it invariably returned to some portion of the house at the approach of night. Its song continued about six weeks during summer, and about two in the autumn; at all other periods it simply uttered a faint chuck, and seemed to possess many of the ordinary habits of the Blue Grosbeak."

The food of this beautiful bird consists of seeds of the cereal plants, of Grasses, and those of different kinds of berries, along with insects. The young are three years in obtaining their full dress, and undergo their changes very slowly.

Although common about the mouths of the Mississippi in spring, when on its way northward, this species is never seen in South Carolina. When proceeding to the Texas in April, 1837, I found it so abundant wherever we landed that hundreds might have been procured. Both sexes were in perfect plumage. Mr. TOWNSEND observed it on the Missouri; and Dr. T. M. BREWER informs me that he shot a fine male at Fresh Pond, near Boston, in the summer of 1832, and knew of two or three females killed afterwards.

Male, 7 $\frac{3}{4}$, 13.

Passes from Texas northward and eastward in great numbers. Breeds on the Missouri, in the Middle States, Newfoundland and Labrador. Rather common. Migratory.

Adult Male.

Bill short, robust, bulging at the base, conical, acute; upper mandible with its dorsal outline a little convex, the sides rounded, the edges sharp; lower mandible with its dorsal outline a little convex, the sides rounded, the edges inflected; the gap-line is deflected at the base; then straight to the end. Nostrils basal, roundish, open, partly concealed by the feathers. Head rather large, neck short, general form robust. Legs of moderate length, rather strong; tarsus anteriorly covered with few scutella, the upper long, posteriorly sharp; toes scutellate above, free, the lateral ones nearly equal; claws slender, arched, compressed, acute, that of the hind toe not much larger.

Plumage soft and blended, but firm and elastic. Wings of moderate length, broad, the second, third, and fourth quills longest, the secondaries rounded. Tail longish, slightly emarginate, of twelve rounded feathers.

Bill white. Iris hazel. Feet greyish-blue. The head all round, including the upper part of the neck, the hind neck, the back, wings, and tail, glossy black; the first row of coverts, the tips of the secondary coverts, the basal half of the primary quills, and the inner webs towards the end of the three lateral tail feathers, white, as is the rump, that part, however, being spotted with black. Lower neck and middle of the breast of a bright carmine tint; lower wing coverts white, tinged with carmine.

Length 7 $\frac{3}{4}$ inches, extent of wings 13; bill along the back 15-24, along the edge 9-12; tarsus 11-12.

Adult Female.

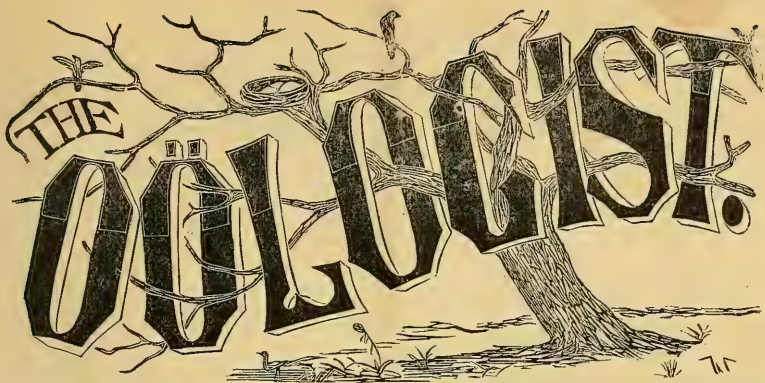
The female differs greatly from the male in external appearance. The bill brown above, paler beneath; iris hazel; feet as in the male. The general colour of the plumage above is olivaceous-brown, spotted with brownish-black, the central part of each feather being of the latter colour. On the head is a central longitudinal band of pale yellowish-grey, spotted with dark brown, then on each side a dark brown band, and above the eye a white one; a brown band from the bill to the eye and beyond it, and under this a whitish band. There are two white bands on the wings, as in the male, but narrower and duller. The quills and tail are brown. The lower parts light brownish-yellow, fading behind into white; the fore-neck, breast, and sides marked with small longitudinal spots or streaks of dark-brown. The lower wing-coverts very slightly tinged with rose-colour.

Young Male in autumn.

After the first moult, the young male resembles the female, but already shews the rosy tints both on the breast and on the under wing-coverts.

Young in first plumage.

In this state also the young resemble the female.



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VOLUME II,

FEBRUARY, 1877.

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A New Feature in the Cowbird's History.

WHILE collecting in the Lower Cross-timbers April 13th, '77, I detected a pair of Blue-gray Gnatcatchers, building a nest on a small post oak tree; the nest was placed on a horizontal branch, was $1\frac{1}{2}$ inches in diameter, seven feet from the trunk and fifteen feet high. So little work had been done on the nest that I could hardly detect the place, only when the birds were at it. While the birds were gone after material, a female *Moluthrus pecoris* alighted in the tree and seemed to be inspecting the foundation of the structure; but when the parents returned they soon flogged her out. Thinking she might be after a nest in which to deposit her eggs, I made a note of the circumstance and continued my collecting.

On April 24th I returned to the place and found the nest to contain three eggs of the Gnatcatchers and one of the Cowbirds. It therefore seems possible that the Cowbird does procure a nest before it is actually needed, although the opinions of some writers would lead to the contrary.

I have noted that about 50 per cent. of the nests commenced by *P. cærulea* are destroyed before completion, and that eighty per cent. of these are totally obliterated.

I have never detected the cause of this destruction, but think it probable that it may be attributed principally to the Cowbird. A battle may ensue, in which the structure is entirely demolished. G. H. RAGSDALE. *Gainesville, Texas.*

[SUCH information as from time to time has fallen under our notice, corroborates the theory of our correspondent, that the Cowbird not unfrequently has its nesting-places selected before the owners have deposited any eggs. There is nothing extraordinary in this fact, and it cannot be anything more than an habitual practice with this bird, to afterward frequent nests in which no eggs were previously deposited. It is very seldom that a Cowbird occupies a nest before it contains any of the eggs of the owners, for we can readily perceive that even so humble and defamed a bird, is endowed with sufficient instinct to know that both nest and its egg or eggs would certainly be abandoned by the unfortunate owner, in that case; hence the habit, as intimated in the above paper, of awaiting the occupancy of the nest by one or more eggs of the possessors, in which case there would be less tendency on the part of the latter to desert the eggs.—ED. W.]

A CURIOUS egg was found in the nest of a Lark Finch recently, by Mr. Ragsdale.

It gives the measurements .48 by .38 inch, and is Roman ochre brown deepening at the small end, which is spotted with a darker shade of the same color. Doubtless it is a deformity that occurred to the last deposit of the season; it evidently is not an egg of the sett in which it was found.

THE *Bulletin* of the Nuttall Club contains some very interesting notes on the nesting of the Black Tern, Wilson's Phalarope, the Western Purple Finch and *Peucaea ruficeps*.

Birds' Eggs and Nests.

Eggs described in this issue:—

Yellow-headed Blackbird, Leach's Petrel, Violet-green Cormorant, Double-crested Cormorant.

404. YELLOW-HEADED BLACKBIRD.

The Yellow-headed Blackbird breeds throughout the west generally, is found plentifully as far east as Michigan and Indiana, and breeds in large numbers in the swamps and marsh grounds of Texas, Arizona, New Mexico, Missouri and the more northwestern States. Specimens have been taken as far east as Pennsylvania and even Massachusetts, but these can only be regarded as accidental.

This bird builds its nest similar to that of the Red-winged Starling, and from the similarity of the bird itself it has been placed in the genus *Agelaius* by some scientists. The breeding ground is always in or near a swamp upon the grassy tussocks of which it builds its nest. There is little or no difference in the general construction of the nest from that of the bird above alluded to, although the birds may use material varying according to locality. As in the case of *A. phoeniceus*, the grass upon which it is built is interwoven in the nest, and sometimes this is three or four feet high—placed in the tops of the long species of swamp grass. Communities of hundreds build to-

gether. The structure is composed of the tough wire-grass, slender reeds, dried grasses, and bits of swamp vegetation, all twined and interlaced together, making a light and solid structure. The eggs are five, not so varying in size as those of the Red-wing, usually ovoidal and measure, maximum, .98 by .70 inch; minimum, .82 by .62 in. A specimen from Texas measures .84 by .68 inch. A casual glance shows them to be mottled ashy-gray, which is produced by a minute dotting of lilac-brown upon a pale white surface. Nest-building commences about May 1; full complements of eggs by the 25th of that month.

642. LEACH'S PETREL.

The Petrels are exclusively sea-birds, and breed only in the immediate vicinity of the ocean. Leach's Petrel is found from New York to Labrador, and breeds most plentifully on the rocky shores of Maine, Nova Scotia, Labrador and Newfoundland. No nest is built: the eggs are deposited in suitable places on the bare rock, often in the most inaccessible places. The eggs are two, exceedingly thin-shelled and brittle, and are white, with an almost imperceptible creamy tint, and no markings except a very faint mottled ring about one end—so faint as to be scarcely discernible. The shape is elliptical, longly so in some specimens; size, 1.30 by .82 inch. The birds do not pass as much of their life on shore as upon the water, and, as well known, are found sometimes hundreds of miles from land.

627. VIOLET-GREEN CORMORANT.

This, the most beautiful of the Cormorants, is a western bird, found along the Pacific and Columbia river. It is also found in California. According to authors and collectors it nests upon trees, building a bulky, coarse affair of sticks and grasses. Some say the nest is built upon the rocks, and it is quite probable that they may occupy both places. The eggs are from three to five, longly ovoidal, pointed, and pale greenish-white, measuring 2.20 by 1.35 inches. In most cases the eggs are entire-

ly covered with a thick, pinkish nest-exudation, to the thickness often, of a sixteenth of an inch. This substance becomes in a short time as hard as the shell. Eggs are laid usually about the first of June.

623. DOUBLE-CRESTED CORMORANT.

The range of the Double-crested Cormorant is not so restricted as that of the last mentioned bird. Dr. Coues gives it a place among the birds of the northwest, and says it is found throughout the interior. It also is an Atlantic bird, its range being from Newfoundland to North Carolina. It breeds in Labrador, building its nest both upon the ground and in trees; this is like that of the preceding species in material and construction. The eggs are from three to five, long and pointed, measuring 2.50 by 1.52 inches. Two specimens in my collection are pale bluish-white, speckled with a few scattering dots of umber. A thin incrustation of white substance envelops the shell, probably the washing of the nest. Many of the little dots are scattered upon this substance, and by scraping come out, which would indicate that at least some of them do not belong to the egg as a natural marking.

TO BE CONTINUED. "OVUM."

Nesting of the Great Northern Shrike in New York.

THREE facts of importance go to prove that the Great Northern Shrike breeds in this State, and that it is the commoner of the two species mentioned in the list of Central New York Birds. First: Having been observed about all winter, it nests mainly in the same place in which it winters. This has been noted by careful observers; *ludovicianus* is never seen here in winter, it being strictly a southern bird—it arrives about the beginning of April. Second: It commences to build its nest as early as the first of April, frequently as early as the 20th of March; a bird arriving as late as the Loggerhead Shrike, even if already paired, would not commence to build as early as

that date. Third: *Collurio ludovicianus* is not found in New England at all, a single specimen only having been seen in Massachusetts, where its occurrence was accidental. If this bird is not found in New England, it is highly improbable that so small an intervention of country as lies between those States and the central part of New York—barely a hundred miles—would create such a marked example of geographical distribution. It cannot be said that *C. borealis* is abundant in any portion of the State, nor has it been found to breed in any part so frequently as in the more northern counties. If our correspondents will be particularly observing of this bird, especially in this State, obtaining specimens whenever practicable, and will communicate to us such notes as they make, we will give due credit for the same in our columns.

NORTHERN AND SOUTHERN HUMMING-BIRDS' NESTS.—There is quite a dissimilarity in material between the nests of northern and those of southern Humming-birds. Out of at least half a dozen specimens of the former, every one is lined with wool, and the fine cottony substance found in the pods of the milk-weed. Three of the latter from North Carolina, are lined with a light, fluffy, pinkish substance. The lichens are more plentiful in all these nests than in the northern specimens, the whole structure is lighter and on the whole handsomer, though much more fragile. These three southern specimens are deeper, and the sides are thinner than in those taken at the north. These nests, being collected at random, form probably the average of all specimens taken in the south.

THE season in the south and west is now fairly open. Our correspondents seem to be making valuable collections in those localities, from the numerous reports of rare eggs we have received. We shall soon hear from them in interesting letters to THE OOLOGIST.



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FEBRUARY, 1877.

SELECTION OF NESTING PLACES.

EACH species of bird has its individual characteristics in respect to the places selected for nidification, and as a rule most birds adhere to these places, in whatever part of the country they may be. Regarding each family of birds as a unit, we can-

not, according to their structure and diversity of habits, perceive any marked deviation from the habitual selection of places in which to nidificate. We find however, that individual species, to no small extent break upon their customary choice of situation for nidification, and that a bird which nidulates without exception in trees for a period of seasons, may the next year, build its nest in a bush or upon the ground; a bird that seldom is known to breed except in deep, dark forests, may one season build its nest in precincts claiming the protection of man, or *vice versa*. In most instances no apparent motive is attributable for this occasional deviation from the common nesting places. Occasionally, the influences of the climate in a particular section, or the failure of food-matter, will have a tendency to compel a bird to desert its favorite haunts for those more favorable, and this sometimes leads to the construction of its nest in places and under circumstances quite different from its ordinary habit in this respect.

Doubtless if collectors would make it an object to note down all the particulars of the nests they find, that exhibit any peculiarity of situation or form, we should find very much of interest. If it were ascertained that a Belted Kingfisher had laid its eggs in the hole of a tree, the note would be of considerable worth, or, did some enterprising naturalist discover an elaborate Heron's nest, he would be justified in making an extensive item of the fact, and yet just such details are very often overlooked. We do not find the nest of the Kind Bird in the depths of the forest; nor do we find the nests of the Ivory-billed, Pileated, or some of the other Woodpeckers in straggling trees about the habitations of man; still, did a parallel case come under the notice of some collectors, no particular attention would be given to it, even though the construction of the nest, an ordinary affair, were elaborately detailed. Any peculiarity in the situation or locality of a nest is always of special interest to ornithologists.

The Chipping Sparrow does not often construct its nest upon the ground, much

less within a few feet of a railroad, but a nest was found under just such circumstances on the Midland railroad in Oneida Valley three years since, and subsequent inquiry testified that the young were reared with as much security as if the nest had been in an apple-tree. If our correspondent who found the nest of the Passenger Pigeon in a hemlock tree, twelve feet from the ground, was certain of its identity as he informs us, here is another instance of the fact that birds will sometimes choose nesting places quite unlike those they are in the habit of resorting to. The nest of the House Wren found a short time ago, in a crevice at the terminus of a powder-blast boring in a stone quarry, near Utica, contained four young birds, and was at least one of the most unique of nesting places. Such instances show that infringements upon the habitual characteristic cannot but frequently occur, and sometimes under the most interesting and unusual circumstances.

It cannot be denied that the disadvantages afforded by vegetation for nesting places, in localities unlike those birds have been accustomed to, are often the cause of the selection of odd positions for nidification. Birds seldom as a general thing breed in localities that do not suit them, but when they do, the nest, when compared in composition and structure to specimens taken from other localities, exhibits a greater or less dissimilarity. For example, we should probably find the more tasteful among our northern builders to employ Spanish moss in the construction of a nest built in the more southern portions of the country; or, we should note the lack of lichens in the nests of some of our arboreal builders, were they constructed on the ground, where the universal substances are straws and grasses.

THE next issue of THE OOLOGIST will be the first number of a new volume. We shall introduce some improvements and it will contain a superb illustration of two of our rare Warblers. Induce your ornithological friends to subscribe.

American Birds.

Notes on the Red Crossbill.

IF the winter be not too severe, *Loxia curvirostris* remains with us in New York from December to February and March. It often makes a permanent residence from the latter part of November until the middle of May, which would indicate that it breeds here. It has never been recognized as a summer resident so far south as Oneida County, and it is quite probable from the fact that it isolates itself during the breeding season, that it has been overlooked. Specimens have been shot as late as the middle of May. I am informed that four of these birds were shot at Clinton, N. Y., about the first of May, and a flock of no less than twenty have frequented a nursery since the latter part of the fall of 1876; at this writing (May 16) they are still among the trees in the same place, where those who have observed them are of the opinion they will breed. Mr. J. P. Davis of Utica, states that a large community of them nested in the trees of what is known as "Savage's Ravine," not over three miles from the city.

Usually it is a very common bird here in winter, but some years very few will be seen. The past winter has been quite favorable for them, and large numbers have been observed everywhere. When they find a place abounding in food they remain in its vicinity all winter and often during part of the spring. The cones of the pine afford them abundance of food, and from the choice it evidences for the soft inner bud or seed of these cones, they form the principal food.

The only note I have heard it utter is a short, repeated "*chirp*," which is delivered on the wing. I have not noticed the flocking of these birds with *L. leucoptera*, although there is no doubt that such occurs. No specimens of the latter bird have been taken here this winter. The flight of the Crossbill is elevated, often at a great height,

quite protracted, and undulating. If disturbed when feeding, a flock will fly about in circles high up, then return to the same tree. They are not at all shy. Several were captured here with a horse-hair noose attached to the end of a fish-pole, and one might at times easily approach within a yard of one while feeding; but if one takes flight the others all follow. I never have seen the nest or eggs of this bird. These birds are very social and do not quarrel when feeding.

AVIS.

Arrival of Birds in Bangor, Maine.

FOR 1877.

- APRIL 1. Robin; Red-winged Blackb'd.
 4. Bl'k-bill'd Cuckoo; Song Spar.
 12. Black Duck.
 14. Lesser Red-poll.
 16. Field Sparrow.
 21. Pewee or Peabody-bird; Great Northern Shrike.*
 23. Hairy Woodp'r; Green Heron.
 24. White-bellied Swallow.
 25. Purple Martin; Chipping Spar.
 27. Cooper's Hawk; Thistle-bird;
 sett of Robin's eggs taken.
 30. Crow nesting.
 MAY 2. Fish Hawk.
 4. Flicker.
 5. Belted Kingfisher; sett. of eggs
 of Great Northern Shrike taken.

C. A. MORSE.

* *Collurio borealis* is a resident mainly, in your State, and can hardly be said to "arrive." Our correspondent doubtless mistook the conspicuousness of the birds about nest-building time for the arrival.—ED. W.

A MALE Tern (*Sterna hirundo*) was taken on a mill-pond near Utica, on May 4th. This is the only instance of the occurrence of this or any other Tern so near this city. Many in their migrations pass over at a great height, but do not alight.

About the Squirrel Hawk.

WRITERS had considered this bird a form or variety of *A. lagopus* var. *sancti-johannis*, until we have reason to believe that Dr. Coues, with his usual promptitude in looking up such matters, placed it upon a sound basis and called it a distinct bird and a good species. The utter weakness in courage, compared with its fine physical proportions and size, is make an especial mark of by Dr. Coues, which, together with an interesting account of the taking of the bird we present:

"Although belonging to a group technically said to be 'ruling' Buzzards (*Archibuteo*'), it is difficult to see where the claim to royal purple lies in this species and others of the same genus, for they certainly lack the qualities that go to make Hawks famous. Viewing their splendid presence, we wonder, as a late writer says, 'that the object of such an admirable organization is nothing more important than the destruction of the smallest and most defenseless of quadrupeds or of reptiles. Yet such is apparently the case. Many of the birds of this group, though powerful in structure, and furnished with the usual apparatus of strong and sharp bill and claws, and other accompaniments of predatory habits, rarely attack any animal more formidable than a mouse or ground squirrel, or in some cases a frog or other of the weaker species of reptiles.' As in some cases of conspicuous personages, become regal by the accident of a name, attributes of royalty compare unfavorably with its apparatus. The contrast between the physique of Rough-legged Hawks and their venatorial exploits, is striking, and illustrates well the fact, that muscular effectiveness is not always co-ordinate with its mass. The force of a little Falcon's onslaught is something more than that of its falling weight; this would tell to little effect, compared with the result of its weight at high velocity. Granting the heavy Buzzards commensurate courage to act with all their force, they cannot, never-

theless, acquire the requisite speed, and so fail of momentum, the product of mass and motion. Excepting during their occasional aerial evolutions, when they appear to circle lightly, they are retarded by their own weight, and are generally observed winnowing low over the ground with almost laborious movement. They pick up their prey as they pass by, dipping obliquely, and it requires no great agility to elude their clutch. Most small birds, it seems, evade capture, so that the Hawks chiefly confine themselves to less active quarry.

"But we must not hastily conclude that the Ferrugineous Buzzard is spiritless because its courage is seldom conspicuous. I have seen it fight bravely at desperate odds. Riding through an open glade, I once observed a Hawk of this species perched on the top of a dead tree that stood alone. Anxious as I was to secure it, I could only ride carelessly along, for there was no cover, and the bird had already marked me. I pretended not to notice it, gradually drawing nearer without altering my horse's pace or making a movement. The ruse succeeded, and I was almost to the tree before the bird unfolded his broad wings and launched into the air. Without even drawing rein I threw up my gun, and the report echoed from the rocks beyond. But the Hawk sailed on, and I thought I had missed, till, following him with wistful eyes, I saw his course gradually lower, and at last he fell heavily to the earth, several hundred yards away. I hastened to the spot, flushed with gratification, but it was a sad sight after all. Shot had penetrated the bird's lungs, and he lay on his breast with wide-stretched wings and drooping head, breathing heavily, while the blood trickled from his beak. Thinking life almost extinct, I dismounted and came up to him, when in an instant he roused, recognized his extremity, and dared me to touch him—for with a convulsive effort he threw himself on his back, stretched out his talons defiantly, and snapped wrathfully, while the old fire flashed again in his eyes. But the effort was too much; while striking wildly, a fresh stream

of blood welled up from his throat, he shivered, his eye grew filmy again, and he lay dead on the stained greensward. Who could but admire the pride that disdained to yield, even at the point of death?

"This method of approaching Hawks is frequently successful, and not seldom the only one that can be employed when the birds are in exposed situations. Ten to one, when perched on a tree-top, they have already espied you before you noticed them, and are watching your movements. If you show they are observed, by attempting to work up to them, they suspect at once, and are off at their own convenience. But they appear to be less afraid of a mounted person than of one afoot, and may be often approached indirectly, with the simple precaution of not making them aware they are themselves observed. Ride until just within range, and shoot on the instant; you will have a fair snap shot, probably just as the bird spreads its wings, alarmed at your sudden stop. The same day I killed the one just spoken of, and but a few moments before, riding through the woods, I came up to a Red-tail, perched on a bough only four or five yards overhead. I did not see it myself until I was right underneath it, too near to shoot; so I rode on a few steps, wheeled suddenly, and made a successful shot as the bird flew. On another occasion a large Hawk suffered a squadron of cavalry to file past him as he cowered against the face of a rocky ledge, not fifteen yards away; and only took wing, a few seconds too late, on discovering, by my motions, that he was observed."

The methods of approach in hunting Hawks are very numerous; the one particularly mentioned by the author of the foregoing was once the source of much vexation and a considerable loss of confidence in narrated expositions of "how to approach shy birds," to us, for we, with the aid of a very affable farm hand, harassed a Rough-legged Hawk in the same general way but with a few variations nearly two days, without obtaining even a fair rifle-shot at it, but

not more than a fortnight subsequently, alone, the man openly chased the bird and shot it. Much depends upon the country in which the bird is found, and whether it had previously been shot at or not.

GENERAL TOPICS.

—OUR correspondent, Mr. Severance of Mexico, N. Y., says that the first specimen of *Guiraca ludoviciana* he ever observed in that portion of the State was noticed there on the 16th of May. . . Several Scarlet Tanagers have also been seen this spring at that place. None have yet been seen at Utica, but at West Winfield we hear that "hundreds have been seen," which is something quite unusual here.

—DR. COUES, in the *Bulletin* of the Nuttall Club has changed the name of the old genus *Seiurus* to *Siurus* and also has stricken out the specific names *auricapillus*, *noveboracensis* and *ludovicianus* and substituted therefor respectively, *auricapillus*, *navius*, and *montacilla*. As always in the altering of scientific names we anticipate "mixtures," and since the recent great changes in classification and nomenclature began to be brought about, one is almost inclined to view the Latin name which is to be the "standard" throughout the world as of very complicated significance: representing a much wider variety of meanings than do English synonyms.

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